I.P. File No. 51 1940 —4/.

Previous reference :

Later reference :

GEN. & REV. SECRETARIAT

BOARD OF INDUSTRIAL PLANNING & CO-ORDINATION

SUBJECT.

Manufacture of Cement asbestos Sheets etc and work of the Sub Committee

---

P 142
E

Dy 57/407

I. R. B. 8] INDUSTRIAL RESEARCH BOARD.

NOTE.

Subject Asbestos - Utilization

File No. of 19

1) Work of the Cement Asbestos Sub Committee was reviewed by the Board at its last meeting.

2) The Chairman observed that this subject might be dropped from the list.

3) At this stage the question of disposing of the stock of asbestos was considered & finally resolved that the possibilities of converting the stock of asbestos (both as S. O. F and with Dr of Geology) to boiler composition might be considered.

4) Dr & Dte has not yet furnished the local demand for boiler composition; a promised by 1-in. Dte has already been remind

8) Dte has since intimated the annual demand as 100 tons

9) Intimate this to Dr SOF & Dr of Geology

10) Write to Dr of Geology asking feed out if any progress has been achieved in the matter of cement-asbestos sheets

5) It is now seen from the Administration report of the Geological Dept that they abt 8000 tons of asbestos

NOTE—Cover Sheet WD 01345—GPB—750 -7-1-41

I. R. B. 8J INDUSTRIAL RESEARCH BOARD.

NOTE.

Subject ..... Asbestos .....

File No. -2- of 19

have been located in Idegandawa area Kollam Taluk.

6) The possibility of utilizing this natural resource will have to be explored. The Dr. of Geology has also stated in the report put up that the ~~making~~ manufacture of Cement Asbestos Sheet from the local raw material is under investigation.

7) In view of the raw material being available, perhaps the Sub Committee might continue to function to explore the possibilities of utilizing the material for Asbestos Sheet etc. (remarks thereon)

for orders

JB 15/1/41

(11) Secy 16/1

(12) Draft Jai letter to (1) Dr. S.O.S. (2) Dr. of Geology put up

JB 17/1/41

(13) Dr. of Geology reports that further action will be taken after June '41 when the Staff returns on completion of quarters

JB 4/3/41.

NOTE—Continued

WD 01345—GPB—750 -7-1-41

NOTE.

Subject Asbestos

File No. of 19

-3-

(14) As resolved by the Bd, the possibilities of the manufacture of Cement Asbestos pipes and Asbestos Boiler Composition had been referred to the Asbestos Sub Committee for investigation. (Vide letter to the Dr. of Geology on 4.4.41) The Convenor (Dr of Geology) will therefore be requested to intimate if the Sub Committee had any meeting till then & if not letter put up

JB 30/6/41 (15) 30/6

'H' (16) Letter No. 9774-82 dated 2/7/41 from the Director of Geology is herewith put up.

(17) The Dir of Geology reports that upto till now it was not possible to conduct any investigations in the Dept on the manufacture of Cement asbestos pipes & Boiler Composition since the Officers were engaged on field work.

WD 01345—GPB—750 7-1-41

NOTE.

Subject Asbestos - Utilisation

File No. of 19

18) He further states that the investigations would be taken up immediately if the experiments proved successful. He would convene a meeting of the Sub-Committee to consider the possibilities of starting the industry.

19) Further report may therefore be awaited.

Submitted for kind personal orders

JB 7/7/41.

20) [signature]
Secretary)

21) Vice-Chairman)
In person

[signature]
7/7

Rec No. 97/41-2 29.8.41

22) I believe Dr Rama Rao Deputy Director has done some work on the manufacture of asbestos paper. The Secy may see the work & also put up a note after which it can be taken with Dr Ramarao.

23) Now that the board plant is working at Bhamawali, shortly about a ton of asbestos may be sent to Bhamawali for being made into boards sheets. Asbestos

OFFICE OF THE SECRETARY INDUSTRIAL RESEARCH BOARD. No. 10/41-2 Date 7/7/41 One file BANGALORE.

OFFICE OF THE CHAIRMAN 28.8.1941. M. I. & S. W. ETC. BANGALORE.

NOTE.

Subject Manufacture of Cement Asbesto Pipes & Sheets

File No. of 19

Engineering Industries Ltd. Bombay Secretariat Building Paper Mills will do the work free of charges.

24) After the results are known as a mechanical Engineering Engineer should be deputed for doing this work. There may be some difficulty in doing so as Mr Diwan Bahadur K. Ramaswamy is interested in starting this industry at Hoshangabad. The Secretary may get in touch with him because of training for engineering young men.

Chairman

25) Subject: Application for working out the Asbestos Cement Sheets Industry at Bhadrawati discussed with Mr. Ramaswamy, Director of Industries.

29/8

38/8

26) To Director of Geology

Requested him to send a ton of asbestos to Bhadrawati for being made into boards & communicated the minutes of the Chairman & V.C

27) Copy of the above letter forwarded to G.L. Manager. Paper Mills & Mr. D.S.W for necessary action

P.T.O

31/8/41.

1/9.

OFFICE OF THE MINISTER FOR LAW
AUG 29 1941
No 952

WD 01345—GPB—750 - 7-1-41

NOTE.

Subject Manufacture of Cement Asbestos Pipes & Sheets.

File No. of 19

H' 28) In the letter of the Dir. of Geo. (No. G.539/27.8.41) it is stated that the above questions will have to be discussed & desire to know if the Cement asbestos Sub Committee (Consisting of the following personnel) may function to consider these questions.

Present Personnel of the Sub Committee.

1) Mr. B. Rama Rao. Dr of Geology.
2) Mr. S.G. Sastry, Dir. S.O.T.
3) Mr. M.K. Narasimhan. Cement Plant.

29) Perhaps the Director's proposal may be approved. It would be desirable if an Officer from the paper Mills — Preferably the Officer working the Board Plant is co-opted as a member. Since the Board meeting will be held on 5/9/41, perhaps the point may be considered.

Sd/- 4/9/41 Forwarded

30) The Cement asbestos Sheets Sub-Committee may be requested to investigate also this question

WD 01345—GPB—750 -7-1-41

NOTE.

Subject Manufacture of Cement Asbestos pipes & sheets

File No. of 19

possibilities of the
relating to the manufacture of Cement ~~pipes~~ asbestos pipes.

31) The Director of Geology has requested that an officer of the Department ~~the~~ may be deputed to Mulund, Bombay to study the actual process of manufacture of these pipes and sheets. The Vice-chairman has already ~~been~~ observed that a Mech. Engr. may be deputed to Mulund. Since this subject will be discussed at the Bd meeting on the 5th the file may be resubmitted after the meeting.

1/9

32) As per orders the file is put up

33) The above proposals were discussed at the meeting of the Bd. held on the 5th. The chairman has ordered that Mr. Krishnachar may proceed to Bhadravati with a ton of asbestos & that the Paper mills might try to make ~~these~~ sheets with Asbestos plant, & that he & another Officer from Bhadravati might visit Mulund factory & submit proposals.

34) The final orders discussion of the Bd meeting of the Chairman at the above may perhaps be intimated to the Dir of Geo. Draft letter put up.

8/9/41. 10/9.

NOTE—Contd. Sheet

WD 01345—GPB—750 -7-1-41

NOTE.

Subject Manufacture Cement Asbestos Sheets and Pipes

File No. of 19

35) As per minute of the chairman & V.C in Para 24 & 25, Diwan Bahadur K. Ramaswamy is to be addressed ~~re admission~~ to secure admission to the Officers who will proceed to Mettur Factory. Draft letter put up.

Jh 11.9.41.

36) It is better that the Vice-chairman addresses ~~Rao Bhadur Bahadur~~ Diwan Bahadur Ramaswamy.

12.9.41.

37) Draft letter may be submitted to Vice-chairman.

12/9

38) Letter No. 18-15 dated 13.9.41 of the Dir. of Geo. Stating that he has already made arrangements to send one ton of asbestos to the Paper Mills & that he would direct Mr. Krishnachari to Proceed to Bhadravati to carry on the expts, on Leaving ton the Govt. Paper Mills is for perusal

39) Revised draft letter for submission to V.C is also put up

Jh 16.9.41. 16/9/41)

NOTE—Contn. Sheet 4 WD-91247—GPB—750—7-1-41

40) Further visit of the Secy. "I shall speak to the V.C about this."

Jh 17.9.41.

NOTE.

Subject Manufacture of Cement Asbestos Sheets + Pipes.

File No. of 19

41) Letter No. P.6252/16.9.41 from the Mysore Paper Mills, Ltd stating that the expts- may kindly be arranged next month, when they could conveniently release the Card board plant.

42) Dir of Geo addressed & a copy of the above is also forwarded to him, as per visit & copy of the letter also sent to Mys Paper Mills.

JKz 24/9/41

43) Do letter (draft) to Dir Gen, requesting him to intimate the present position & also to forward fortnightly Progress reports pertaining for offl. Copy of letter sent to Mys Paper Mills for info.

JKz 25/x/41.

44) Offs of Secy as 28/X/41 Issued as 28/X/41

45) Submitted with reference to the orders of the Secy. Vide paras 36 & 37 of the Note sheet re: letter to Diwan Bahadur Ramaswamy

JKz 30/X/41

46) It is far too early

WD 01345—GPB—750 -7-1-41

NOTE.

Subject Manufacture of Cement asbestos Sheet & Pipe.

File No. of 19

to get instruction to visit the factory where the officers are not yet ready to do so. Just when they are ready, after the completion of Experiments, the Vice-Chairman may be approached for an Letter to Diwan Bahadur Ramaswamy

30. 10. 41

47) Do letter No. 18-19 of 30.10.41 from the Dir. of Geo. forwards a note on the proposed investigations for review.

48) As per instns, this review is placed before the Bd at the meeting 3.11.41

31.10.41.

49) Reviewed at the meeting held on 3.11.41.

To the Dir of Geo.

Extract from Proceedings of the meeting held on 3/11/41 for review & further action. Letter issued 20/11/41

50) Do letter No. 18-16 Dated 16.2.42 from the Dir of Geo. Submitted to the Chairman vide note on the original letter. - Jaffar Hag

27/2

WD 01345—GPB—750—7-1-41

BOARD OF INDUSTRIAL
PLANNING AND COORDINATION.

I. R. B. 8] INDUSTRIAL RESEARCH BOARD.

NOTE.

Subject Cement asbestos Sheets & Pipes Manufacture

File No. of 19 .

S1) Do letter No. 18.63 dated 18.3.42 from the Dir of Geo forwarding a detailed progress report on the progress of the investigations is for perusal.

S2) The Director has stated in the report that from the expts conducted in the Geol. Lab'y, some sheets of the required strength had been obtained but none of the sheets prepared in the Mill Board ~~Plant~~ Plant at Bhadrawati attained that strength. He is of the opinion that the expts should be continued further

S3) The subject will be included in the agenda for the next meeting and the report placed before the Board for consideration.

In the meanwhile the report may perhaps be forwarded to the Dir of Ste & Chairman M. I. S. W for perusal & remarks.

S4) For favour of orders

WD 01345—GPB—750—7-1-41

20/3/42

P.T.O

Subject: Manufacture of Cement asbestos Sheets & Pipes

BOARD ... PLANNING & CO-ORDINATION
MAR 20 1942
No 1265/41.9

OFFICE OF ...
MAR 20 1942
No 9385

55) The Report from the Director is for perusal. Two Copies have been received. If approved, one Copy it will be sent to the Chairman N.I.S.W. Min of Mun with a request that it may be perused by him & the Director & the first return after perusal. The other Copy will be retained for the Chairman's perusal.

Labour Minister
(through Dev. Secy)

Dhn 20/3

56) WD 20/3/42

57) 20/3 WH 23/3

Dr 23/3

58) D of I letter submitted
Dhn 24/3

59) Progress reviewed at the meeting held on 8.4.42. Decision of the Board communicated to the Dir of Geo. on 17.4.42 Letter No. 18-75 dated 19.5.42 from the Dir of Geo. intimating that there is no Progress in the explosives

60) Perused by the Chairman on 26.5.42 (vide separate file.)

Manufacture of Cement asbestos Sheets & Pipes.

General and Revenue Secretariat | File No. | of 194 . | [App. F. III—2

Serial No.

Letter No. 18.90 dated 16.7.42 from the Dir. of Geo.

61) forwards a copy of letter from the Gl. Manager, Mysore Paper Mills explaining the difficulties at present in placing the Cardboard Plant at the disposal of the Geological Dept to continue the experiments & States suggests that the investigations will have to be postponed for sometime to come.

62) The Chairman observed at the last meeting held on 29.8.42 that work in this direction might be expedited (Flag "H") The Report of the Director is for perusal. Both the Dir of Geology and the Director of Ind (also Chairman of the Mysore Paper Mills) will be present at the next meeting The matter may be discussed further if necessary at the meeting. If agtd this subject will also be included in the agenda. The Report may perhaps be submitted to the

63) Included in the agenda Yes

16/8/42

NOTE—Contn. Sheet.

.WD 01165—GPB—55,000—23-10-41

Manufacture of Cement asbestos Sheets and pipes.

27 S 0

File No. of 194 . | General and Revenue Secretariat.

Serial No.

The Chairman and Dep Secy for favour of perusal for orders.

64) Dr perused.

Sh 15/7/42

The chairman / M.in. of P.R. / Dy Dep Secy

65) In the circ[ular] reported by the Mills, this work has to be taken up only some time later.

RCC 17.7.42

66) UO 16/7/42 For 16/7

OFFICE OF THE ... FOR FINANCE & REVENUE 16 JUL 1942 No. 485

UO 20/7 For 20/7

67) For instructions whether this Subject may also be included in the agenda as ordered at Para 63, and if so, the orders at Paras 65 & 66 above may be Communicated to the Dir of Geo & to the M. P. Mills after the meeting is over. For orders

Sh 23/7/42 For 25.7.42

68) Subject included in the agenda for the meeting on 15.9.42

Sh 11/9

Meeting held on 15.9.42 & the report was perused by the Board.

BOARD OF INDUSTRIAL PLANNING AND COORDINATION.

Manufacture of Cement asbestos Sheets & Pipes

General and Revenue Secretariat | File No. | of 194 | [App. F. III—2

Serial No.

This subject was discussed at the meeting held on 15.9.42 and the decision of the Board will be separately communicated immediately the proceedings are approved.

In the meanwhile Govt of Mysore is invited to Paras 65-68 of the note & the order at para 65 & 66 will be communicated to the Director of Geology & he will be requested to complete the trials as early as possible.

Draft letter also put up.

Please bring up

Jk 26/9/42

Taken on 28.9.42 Sd/- 28.9.42

Let the minutes of proceedings be received approved.

Sd/- 28.9.42

The minutes of the Board has already been communicated to the Dir of Geo. for orders & the above draft letter is to be issued now.

Jk 16/10/42

In view of the decision of the Board no further action (as at para 65) appears to be necessary. The Director has promised to take necessary further action.

Sd/- 16/10/42

NOTE—Contn. Sheet.

WD 04165—GPB—55,000—23-10-41

Draft Secy

MB 31/10/42 Sd/- 2/11

Manufacture of Cement Asbesto Sheets and

Files

30

D. 211

D.F. File No. 30/12 of 194 . General and Revenue Secretariat.

Serial No.

At the last meeting (15.9.42) the Dir of Geo was requested to Publish the results of the investigation in the form of a bulletin & his decision was communicated to him by Demi-official letter dated 16.9.42. Perhaps, he may be requested to intimate the Present Position. Orders

Dh3 24/12/42

TO 24/12/42

D.F.7 subs

Dh3 4/1/43

TO 4/1/43

To. The Dir of Geo.
No. D.F. 413/42-3, 5.1.43.

From Dir of Geo. No. G.1698/7.1.43
Intimating the Present Position & the publication of the bulletin.
The bulletin is under Compilation it is also stated that relevant information has been furnished to two or three parties interested in the industry. For Perusal

Dh3 15/1/43 (W Secy)

TO 15/1/43

WD

25/1/43

Letter No. D.S.I.S/DH-467-42 of 8/6/43 from the Dep. of Commerce & Ind. appl. for the publication of the bulletin

Manufacture of Cement

D.P. 5 Nov 44 DP 442

The enclosed has been published by the Dir of Geo as directed by the Board (vide Dte 467/44 - Separately recorded) The results have been explained by Mr. H. Sanjeeva Rao of Mysore Mines. orders have been issued.

~~This~~ Sub Committee has also been discharged vide letter No. D.P. 377/43 of 19-5-44. - D.P. 22/43

This file will be closed, if approved

22/5

Confidential.

BOARD OF INDUSTRIES AND COMMERCE.

Proceedings of the Meeting of the Industrial Research Bureau Sub-Committee of the Board of Industries and Commerce held in the Chambers of the First Member at 1 p.m. on Tuesday the 7th November 1939.

Chairman.

Rajamantrapravina N. Madhava Rau, B.A., B.L.,
First Member of Council.

PRESENT.

1. Dr. J. C. Ghosh, D.Sc., F.N.I.,
   Director, Indian Institute of Science, Bangalore.
2. Mr. M. S. Ramchendra Rao, B.A.,
   Director of Industries and Commerce in Mysore.
3. Mr. M. Venkatanaranappa, B.A.,
   Chairman, Mysore Iron & Steel Works, Bhadravati.
4. Mr. M. A. Srinivasan, B.A.,
   Government Director of Industrial Concerns.
5. Mr. S. G. Forbes, E.E., B.Sc., (E. & M.E.) Mem. A.I.E.E.,
   Chief Electrical Engineer in Mysore.
6. Mr. T. G. Rama Iyer, B.A.,
   Director of Agriculture in Mysore.
7. Mr. B. Rama Rao, M.A., D.I.C.,
   Director of Geology in Mysore.
8. Mr. B. K. Murthy, B.E. (Mech.), M.Sc. (Techl.), A.M.C.T.,
   Principal, Sri Krishnarajendra Silver Jubilee Technological Institute, Bangalore.
9. Mr. A. Venkata Rao Telang, M.A., F.Inst.P.,
   Professor of Physics, Central College, Bangalore.
10. Dr. B. Sanjeeva Rao, M.A., Ph.D. (Lond.),
    Professor of Chemistry, Central College, Bangalore.
11. Mr. E. K. Ramaswami, B.Sc., A.C.G.I., M.A.S.M.E., M.I.E. (India),
    Principal, College of Engineering, Bangalore.
12. Dr. M. N. Ramaswamy, M.Sc., D.Sc. (Munich),
    Forest Chemist.
    (Represented Chief Conservator of Forests in Mysore, absent on deputation).
13. Mr. P. H. Krishna Rao, M.A.,
    Secretary to Government, Development Department.
14. Mr. V. Venkatachar, M.A., B.Com.,
    Assistant Director of Industries and Commerce (*Secretary*).

ABSENT.

1. Mr. S. G. Sastry, B.A., M.Sc. (Lond.), F.C.S.,
   Director, Sandalwood Oil Factory, Mysore.
2. Mr. C. Abdul Jabbar, B.A.,
   Chief Conservator of Forests in Mysore.

(Letters expressing their inability to attend the meeting were received from them).

Formation of a Central Industrial Research Board in Bangalore.

The Chairman referred to the decision adopted by the Board of Industries and Commerce at its meeting held on 15th July 1939 in favour of bringing into existence a Central Industrial Research Board in Bangalore both to co-ordinate research work carried on in the several Government Departments as well as to suggest new problems of industrial importance and guide research work on such lines as to prevent over-lapping, and observed that the questions relating to the personnel of the proposed Board and the programme of work should be considered at this meeting.

The Chairman requested Dr. J. C. Ghosh, Director, Indian Institute of Science, to give an idea regarding the constitution and working of the Bengal Industrial Research Board.

Dr. J. C. Ghosh explained that the Bengal Industrial Research Board was constituted of Technical Officers of Government, Professors of Science of University, Representatives of Chambers of Commerce and Technical Experts. The Board sent out enquiries to important industrial and commercial concerns, Chambers of Commerce, etc., to elicit information regarding problems of industrial importance and a Sub-Committee of the Board selected from out of the subjects suggested only such as were of immediate industrial importance. The subjects so selected were referred to Sub-Committees consisting of technical experts or University for detailed investigation and report and the funds required by them were placed at their disposal out of the funds granted to the Board by Government.

Dr. B. Sanjeeva Rao referred to the Committee of Scientific and Industrial Research in London and said that this Committee was conducting research work of scientific and industrial importance through its several Sub-Committees appointed for the purpose and was making the results of research work available to all those interested in them.

Mr. S. G. Forbes, explained that in U.S.A. there is a Central Research Institution which is undertaking research work of all kinds referred to it by industrial concerns, commercial and scientific bodies, etc., and making the results available to them. The institution was meeting the expenses involved out of the funds placed at its disposal by those entrusting it with research work.

Continuing, he said, that in view of the rapid industrial development of the country, a Central Research Board should be brought into being immediately and might be affiliated with such institutions in Britain and America to facilitate mutual exchange of information.

Mr. M. Venkatanaranappa suggested that in view of the diversity of the problems to be considered by the Board, investigations and research work on the several subjects must necessarily be carried on by a number of Sub-Committees consisting of technical men actually engaged in the particular line of research.

All the members were agreed that there was immediate need for a Central Research Board in Bangalore with a view to furthering scientific and industrial research of practical importance.

The Committee adopted the following Resolutions:—

This Committee recommends that, in view of the rapid industrial development that has taken place in Mysore and the need to undertake research on problems of industrial and commercial importance and value both to Government and aided industrial concerns working in the State, Government be moved to constitute at an early date a Central Industrial Research Board in Bangalore consisting of some of the heads of all Government Technical Departments, the Director of the Indian Institute of Science, Scientists engaged in research work, Representatives of Industrial Concerns in the State including the Kolar Gold Mining Companies.

This Committee recommends that the proposed Industrial Research Board should be independent of the Board of Industries and Commerce and should have a small Executive Body to attend to routine work;

that the functions of the Board will be to co-ordinate research work that is now being carried on in several technical departments of Government, to suggest problems of immediate or ultimate industrial importance for investigation and to guide research work on such lines as to prevent over-lapping, waste of time and money;

that such research work be carried on by Sub-Committees appointed for the purpose and in such places where facilities are available; and

that the Board may meet once a quarter to review the work of the Sub-Committees and to consider other matters with a view to furthering the scheme of research work.

The question of the programme of work was then taken up for consideration.

In this connection, the Director of Industries and Commerce observed that he had collected information from all the Government and Government aided industrial concerns as to their requirements of raw materials and semi-processed goods which they were importing and the imports of which had been rendered both difficult and costly owing to the outbreak of hostilities in Europe. A list of such materials required by them had been circulated to members for information.

Proceeding, the Director said, that at the moment the possibilities of locally manufacturing such materials as were now being imported by the industrial concerns in Mysore for purposes of manufacture, as furnished in the list, might be taken up for investigation in the order of importance. This suggestion met with general approval.

The Committee examined in detail the various raw materials and semi-finished goods that the industrial concerns were importing and constituted the following Sub-Committees to examine and report the possibilities of manufacturing them locally.

(i) Manufacture of Super-phosphates.

This constituted an important manure which was at present being imported. The question of preparing this chemical from bone meal is at present engaging the attention of Mr. S. G. Sastry, Director, Sandalwood Oil Factory, and Dr. Krishnaswamy of the Indian Institute of Science. The following Sub-Committee was constituted to examine the possibilities of manufacturing it locally :—

1. Dr. J. C. Ghosh, D.Sc., F.N.I.,
   Director, Indian Institute of Science (*Convener*).
2. Mr. S. G. Sastry, B.A., M.Sc., F.C.S.,
   Director, Sandalwood Oil Factory, Mysore.
3. Dr. K. R. Krishnaswamy, B.A., D.Sc., (Lond.), F.I.C.,
   Indian Institute of Science.

Dr. Ghosh to be the co-ordinating member and convenor.

(ii) Manufacture of Hydraulic Lime.

This is required for paper and other industries. This is, at present, being imported from Belgium and some quantity from Dhronachalam and Rampur. There are good lime stone deposits near Voblapur and other places in the State. The Director of Geology has already carried out some investigations, the results of which are reported to be encouraging. The further investigation of the question was referred to the following Sub-Committee :—

1. Mr. B. Rama Rao, M.A., D.I.C.,
   Director of Geology (*Convenor*).
2. Dr. H. S. Sharma, Ph.D. (Lond.), D.I.C. (Lond.)
   Chemist, The Mysore Paper Mills, Bhadravati.
3. Mr. Balakrishna, B.A.,
   Mysore Iron and Steel Works, Bhadravati.
4. Mr. G. Gundu Rao, M.Sc., A.I.I.Sc.
   The Mysore Sugar Co., Ltd., Mandya.

(iii) Manufacture of Ferro Manganese, Ferro Silicon, etc.

These are, at present, being imported from abroad by the Mysore Iron and Steel Works. Mr. Venkatanaranappa said that Mr. D. V. Krishna Rao was conducting experiments in regard to its manufacture at the works.

It was decided that the experiment be continued at the Iron and Steel Works and that Dr. B. K. Ramprasad, Government Electrical Department, be associated with Mr. D. V. Krishna Rao.

(iv) Magnesite Bricks.

These are at present being imported from Messrs. Burns & Co.'s Potteries at Ranigunj.

Mr. Rama Rao said that he had conducted some experiments but that they were discontinued owing to lack of suitable raw material for the purpose.

A suggestion was made that the brick plant in the Mysore Iron and Steel Works may be made use of for making these bricks.

The Chairman of the Mysore Iron and Steel Works was requested to send a Note on the subject for the consideration of the Board.

(v) Grinding Bodies for the Cement Plant.

These are also used in the Porcelain Factory. They are now being imported.

The Chairman, Mysore Iron and Steel Works, was requested to send a Note with samples to the Director of Geology for investigation and report.

(vi) Manufacture of Caustic Soda.

This is required by the Mysore Paper Mills, and by several other industries, such as Soap Factories, etc.

It was pointed out that the marketing of chlorine obtained as bye-product in the manufacture of caustic soda presented a problem. Further, the Okha Works and the Mettur Chemicals who are likely to start work in the near future might be able to supply the demand for caustic soda in Mysore. The question as to the quantity required by industrial concerns in Mysore, the outlets for the disposal of chlorine obtained as bye-product and the chances and scope for the industry, may all be investigated by the following Sub-Committee:—

1. Mr. M. A. Srinivasan, B.A.,
   Government Director of Industrial Concerns (*Convenor.*)
2. Mr. S. G. Sastry, B.A., M.Sc., F.C.S.,
   Director, Sandalwood Oil Factory.
3. Dr. B. K. Ramprasad, M.A. (Hon.), D.Sc., M.I.E. (Ind.)
   Government Electrical Department.
4. Dr. K. R. Krishnaswamy, B.A., D.Sc. (Lond.), F.I.C.,
   Indian Institute of Science.

(vii) Manufacture of Glauber Salt.

This is obtained as a bye-product in the manufacture of Sodium Bi-chromate. A scheme for the manufacture of the latter was under consideration by a Sub-Committee of the Board of Industries and Commerce. It was therefore decided that this question might be pursued by that Sub-Committee, and that the question of manufacturing Glauber Salt locally in view of there being a large demand for it may be investigated by (1) Dr. Krishnaswamy and (2) Dr. B. K. Ramprasad.

(viii) Manufacture of Alum.

Alum is required by the Paper Mills Co., by the Water Supply Department, etc. A large quantity of it is at present being imported.

The Director of Geology said that he had been conducting experiments with raw materials available in Mysore. Kemmangundi deposits are found useful. The further investigation of the question was entrusted to the following Sub-Committee:—

1. Mr. B. Rama Rao, M.A., D.I.C.,
   Director of Geology (*Convenor*).
2. The Director of Public Health.
3. Mr. S. G. Sastry, B.A., M.Sc., F.C.S.
   Director, Sandalwood Oil Factory, Mysore.
4. Dr. B. K. Ramprasad, M.A. (Hon.), D.Sc., M.I.E., (Ind.)
5. Mr. N. K. Seshadry Iyengar, B.A., M.Sc.,
   The Mysore Paper Mills, Ltd., Bhadravati.

(ix) Manufacture of Carbon Electrodes.

The Chairman, Mysore Iron and Steel Works, said that some experiments were being conducted in the Works with magnesite, making use of a Press obtained from the Government Electric Factory. The results were not encouraging. The passage of electricity was not good, which reacted on output.

Dr. Ghosh observed that Graphite Electrodes were very costly.

It was recognised that this was a serious problem and should be tackled immediately by the following Sub-Committee:—

1. Dr. B. K. Ramprasad, M.A. (Hon.), D.Sc., M.I.E., (Ind.), (*Convenor.*)
2. Mr. D. V. Krishna Rao, B.A., of the Mysore Iron and Steel Works,
3. One Chemist from the Mysore Paper Mills, and
4. One from the Indian Institute of Science.

(x) Manufacture of Soaps required by the Textile Mills.

The Government Director of Industrial Concerns explained that he had obtained samples of Marseilles soap from the Mysore Spun Silk Mills, Ltd., Channapatna, and had arranged to supply similar soaps to them, and he was also arranging to supply them to Sri Krishnarajendra Mills, Ltd., Mysore, and the Bangalore Woollen, Silk and Cotton Mills, Ltd.

(xi) Manufacture of Plastics.

Experiments in regard to manufacture of plastics were being carried on in the Indian Institute of Science by Mr. Srinivasaiya, by the Mysore Iron and Steel Works and by the Government Electric Factory.

The Chairman, Mysore Iron and Steel Works, said that they have ordered for machinery to try the manufacture of plastics on a semi-commercial scale. The following Sub-Committee was entrusted with the further investigation of the problem:—

1. Mr. V. Paul, Indian Institute of Science.
2. Mr. Ahmedali, Chemist, do
3. Mr. M. Srinivasaiya, B.A., F.I.I.Sc., of the Indian Institute of Science.
4. Mr. V. Rama Rao, B.Sc., of the Government Electric Factory.

(xii) Manufacture of Copper Wire, Galvanised Pins, etc.

The drawing of copper wire has been undertaken by the Government Electric Factory. The question of manufacturing galvanised steel pins and shackle for insulators may be investigated by the Government Director of Industrial Concerns with the co-operation of the Industrial Engineer and a representative of the Mysore Iron and Steel Works.

(xiii) Manufacture of Tube Glass.

The Director of Industries and Commerce said that the Mysore Glass and Enamel Works proposed to undertake the experimental manufacture of tube glass.

The Committee decided that the Director, Indian Institute of Science, may persuade one of the students in the Institute also to undertake this work.

(xiv) Manufacture of Chemicals, Drugs and Essential Oils.

The following Sub-Committee was constituted to go into the question:—

1. *Sastravaidyapravina*
   Dr. S. Subba Rao, B.A., M.B.C.M., L.R.C.P. (Lond.), M.R.C.S. (Eng.), D.P.H., Retired Senior Surgeon (*Convenor*).
2. Dr. B. T. Narayan, B.A., Ph.D., D.Sc.,
   Bio-Chemist, Department of Agriculture.
3. Mr. B. H. Krishna, M.Sc., A.I.C., A.I.I.Sc.,
   Industrial and Testing Laboratory.
4. Dr. B. L. Manjunath, B.A., M.Sc., D. PHIL.,
   Professor of Organic Chemistry, Central College.
5. Dr. P. C. Guha, D.Sc., (Cal.) of the Indian Institute of Science.
6. Dr. L. S. Doraswami, M.Sc., (Lond.) Ph.D., (Lond.),
   Superintendent of Government Gardens.
7. Mr. M. S. Krishna Rao,
   Superintendent, Government Soap Factory.
8. Dr. M. N. Ramaswami, M.Sc., D.Sc.,
   Forest Chemist, Forest Research Laboratory.
9. Mr. B. Sanjeeva Rao, B.A., M.Sc., (Mad.), F.I.I.Sc., of the Indian Institute of Science.

(xv) Manufacture of Cement Asbestos.

The Director of Geology said that some experiments had been conducted and as cement and asbestos were both available in Mysore, it was worthwhile taking up the investigation of this question.

The following Sub-Committee was constituted to examine this subject:—

1. Director of Geology in Mysore (*Convenor*).
2. Mr. S. G. Sastry, B.A., M.Sc., F.C.S.,
   Director, Sandalwood Oil Factory.
3. Mr. M. K. Narasimhan, B.A.,
   Cement Factory, Bhadravati.

(xvi) Manufacture of Potassium Permanganate.

The Director of Geology said that he had sent up proposals to Government for undertaking experimental work. It is proposed to prepare this by making use of ore available locally by electrolytic process.

The Committee decided that a scholar of the Indian Institute of Science may also be associated with the above work proposed to be carried out by the Director of Geology.

(xvii) Manufacture of Corundum Wheels, Sand Paper, etc., Abrasive Materials.

Dr. J. C. Ghosh said that some experiments had been conducted in the Institute in this respect.

The Director of Geology had also done some experiments and one Mr. P. Satyanarayana, Consulting Industrial Geologist, Malleswaram, Bangalore, has also done some work on it.

The Director of Geology was requested to get into touch with Dr. J. C. Ghosh and also to associate Mr. Satyanarayana with the work.

(xviii) Production of Cinchona.

Research work on cinchona taken up by Dr. M. N. Ramaswamy of the Forest Department may be continued and he be requested to send periodically progress reports to the Board.

(xix) Manufacture of Water-proof Fabrics.

This had been considered by the Board of Industries and Commerce. The note promised by the Director of Sandalwood Oil Factory may be obtained and the question pursued.

(xx) Mixture of Petrol and Power Alcohol.

Different percentages of petrol and ethyl alcohol which would give the best results as engine fuel should be tried in the Engineering College. If facilities are available motor car running tests may also be conducted. This must be done in a continuous manner.

The work may be carried out by the Principal, Engineering College, and a Chemist from the Mysore Sugar Company to be associated with him.

(xxi) Testing of Textile Samples.

There were ample facilities for the testing of cotton samples in the Indian Central Cotton Committee's Laboratories at Matunga.

In regard to testing of wool samples, etc., the Live-Stock Expert of the Department of Agriculture may be associated with the Principal of the Sri Krishnarajendra Silver Jubilee Technological Institute.

(xxii) Sulphur.

The Committee considered that as this was an important material required by most of the industries, its preparation from ores available locally should be investigated.

The Director of Geology said that he had been conducting experiments but as good ore had not yet been discovered, it had not been possible to arrive at any workable data.

The Committee considered it desirable to continue the investigation though this was of a long-range character and the Director of Geology agreed to do so.

(xxiii) Manufacture of Copper Sulphate.

There was a good demand for copper sulphate both by the Agricultural Department and the Forest Department. Mr. M. A. Srinivasan mentioned that the Mysore Chemical Manufactures, Limited would be manufacturing this article shortly.

(xxiv) Manufacture of Sodium-Bi-Chromate.

There is a good demand for this chemical also by the tanning and other industries in the State. A separate Sub-Committee of the Board of Industries and Commerce has been appointed to go into this question. Their report may be awaited.

The Sub-Committee resolved that these recommendations may be communicated to the Board of Industries and Commerce and to Government for consideration.

V. VENKATACHAR,
Secretary.

N. MADHAVA RAU,
Chairman.

WD 2977—GPB—200—12-12-39.

Tel. Address: "SANDAL" MYSORE.
Telephone No. 362.

GOVERNMENT OF MYSORE.

Office of the Director,
Sandalwood Oil Factory, Mysore.

No.
Encl. 2 sets of notes.

Dated 15th March *193*40.

FROM

S. G. SASTRY, ESQ., B.A., M.Sc. (Lond.),
Director, Sandalwood Oil Factory.

TO

V. Venkatachar, Esq., M.A., B.Com.,
Secretary, Board of Industries & Commerce,
Bangalore.

SIR,

Board of Industries & Commerce meeting on 16.3.40.

I have the honour to request you to kindly obtain leave of absence from my attending the meeting tomorrow afternoon, since I have to attend to some urgent technical work at Belagula.

I enclose herewith short notes for your consideration, on some of the different subjects on the agenda.

I have the honour to be,

S i r,

Your most obedient servant,

S G Sastry

Director.

SGS:ATK)

MYT.P.
Ack with thanks -
W

submitted for kind perusal
W
16.3.40
seen by the chairman
W

Chairman

N O T E S.

Manufacture of Cement Asbestos.

The Sub-committee could not meet. So far as I am concerned, I have carried out a number of experiments in the Sandalwood Oil Factory with

(a) Mysore cement and Mysore asbestos,

(b) Mysore cement and Kadapa asbestos and

(c) Mysore cement and mixtures of Kadapa and Mysore asbestos.

Fifteen sample corrugated sheets of various compositions have been prepared and kept under observation. Many of these are strong and durable.

A specially designed roofing tile has also been manufactured. We have a small lot of 25 of these. Each tile measures 18" x 12".

Nearly 160 Mangalore pattern cement asbestos tiles on varying composition have been prepared and a watchman's shed has been completely roofed over with this material. The details of these experiments have been compiled in the Sandalwood Oil Factory. The total quantity of cement asbestos sheets prepared till now in the Sandalwood Oil Factory will be about 400 s.ft.

--

SGS:ATK)

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--

SGS:ATK)

Imust.

Re 686

22nd April /40.
23

V.Venkatachar Esq.,M.A.,B.Com.
XXXXXXXXXXXXXXXXXXXXXXX

Dear Sir,

I am directed to invite a kind reference to the Proceedings of the Meeting of the Industrial Research Bureau on the 7th November 1939 constituting a separate Sub-Committee to examine the possibilities of manufacture of Cement Asbestos. I am to request you kindly to inform me if any meetings have been convened and if so to kindly send me a copy of the findings of the Committee for being placed before the Board at its next meeting.

The favour of a very early reply is requested.

Yours sincerely,

B.Rama Rao Esq.,M.A.,D.Sc.,
Director of Geology in Mysore,
Bangalore.

SGR-2)

Mr. B. RAMA RAO, M.A., D.I.C., F.G.S.,
Director of Geology.

MYSORE GEOLOGICAL DEPARTMENT,
Camp Sulekere
~~Bangalore~~, 19th April 1943

D. O. No. A.

Dear Mr. Venkatachar,

In sending herewith a copy of letter from the Ag. Director of Sandalwood oil Factory, I request you kindly to reply him direct very early and to send me also a copy of your reply to him for my needful. Your reply may kindly be sent to my office at Bangalore.

Yours Sincerely,
B. Rama Rao

V. Venkatachar, Esq., M.A., B. Com.,
Secretary,
Board of Industries and Commerce,
Bangalore.

Copy of the D.O.letter No. 86.dated 15th April 1940, from the Director Sandalwood Oil Factory, Mysore. to the Director of Geology in Mysore, Bangalore.

Your D.O.letters No.G.1930 and G.1933 of the 11th inst. addressed to Mr.S.G.Sastry have been passed to me. I do not know whether the membership to these sub-committees is personal to Mr.Sastry or whether the Director of Sandalwood Oil Factory is a member. I shall be obliged if you kindly clear this point and intimate it to me at an early date.

" C O P Y "

B Ramalas

D I R E C T O R,

Mysore Geological Department.

MYSORE ECONOMIC CONFERENCE.

BOARD OF INDUSTRIES AND COMMERCE.

Subject Manufacture of Cement Asbestos -- Sub-Committee.

File No. 691 of 25 4 1940.

Encl one file

SECRETARIAT
FIRST [illegible] OF COUNCIL
APR 25 1940
No 9883

Flag 'K'

Submitted.

Referece: D.O.letter No.A dated 19th April 1940 from the Director of Geology, Bangalore forwarding a copy of letter received from the Ag. Director, Sandal Oil Factory, Mysore and requesting to let him know whether the membership to the above sub-committee is personal to Mr.S.G. Sastry or if the Director, Sandal Oil Factory, Mysore, is a Member.

The Director, of Geology who is the Convenor of the Sub-Committee, telephoned to me that he is anxious to convene a meeting of the above Sub-Committee on the 3rd proximo and he desires that the above point may kindly be cleared so as to enable him to convene the meeting.

Mr.S.G. Sastry has conducted certain experiments on the manufacture of Cement Asbestos as stated in his note to the Board on 15th March 1940

Flag "A"

Orders are solicited if Mr.K.Parthasarathi, Ag.Director, Sandal Oil Factory may be requested to serve on the Sub-Committee or if the membership should be treated as personal to Mr.S.G. Sastry.

Dated, 25th April 1940.

DIRECTOR) Absent from H.Q. on tour

25-4-40 Secretary

CHAIRMAN) 26/4/40

HSR) 25-4-40.

The Dy Geology may be informed accordingly 26/4/40

Draft letter 26/4/40.

NOTE—Contn. Sheet.

WD 921—GPB—1,500—26-9-28

691
25/4/40 one file
Encl

Manufacture of Cement Asbestos - Sub-Committee.

Submitted.

Flag 'C'

Referece: D.O.letter No.A dated 19th April 1940 from the Director of Geology, Bangalore forwarding a copy of letter received from the Ag. Director, Sandal Oil Factory, Mysore and requesting to let him know whether the membership to the above sub-committee is personal to Mr.S.G. Sastry or if the Director,Sandal Oil Factory, Mysore is a Member

---

The Director,of Geology who is the Convenor of the Sub-Committee, telephoned to me that he is anxious to convene a meeting of the above Sub-Committee on the 3rd proximo and he desires that the above point may kindly be cleared so as to enable him to convene the meeting.

Flag "A"

Mr.S.G. Sastry has conducted certain experiments on the manufacture of Cement Asbestos as stated in his note to the Board on 15th March 1940

Orders are solicited if Mr.K.parthasarathi Ag. Director,Sandal Oil Factory may be requested to serve on the Sub-Committee or if the membership should be treated as personal to Mr.S.G. Sastry.

Dated,25th April 1940.

25-4-40

DIRECTOR) Absent from Hqrs.

CHAIRMAN)

SR)25-4-40.

Immediate. 692 / Encl one file

25th April 40

Mr. V. Venkatachar, M.A., B.Com.,
xxxxxxxxxxxxxxxxxxxxx

Dear Mr. Gabriel,

I am sending herewith a file relating to the Manufacture of Cement Abbestos for being -- submitted to the Chairman of Board of Industries and Commerce. Since the Director of Geology is very -- anxious to covene the sub-committee meeting on the 3rd proximo, I shall be much obliged if you can kindly submit the file immediately and obtain orders of the Chairman.

Thanking you,

Yours sincerely,

W

C. L. Gabriel, Esq.,
Personal Assistant to the
First Member of Council,
Bangalore.

HSR)24-4-40

Mr. B. Rama Rao, M.A.,D.I.C.,F.G.S.,
Director of Geology.

IMMEDIATE

Mysore Geological Department.

Bangalore 25th April 1940.

D.O. No. G. 2103.

Dear Sir,

With reference to your D.O. letter No.686 dated 22/23rd April 1940 requesting to be informed if any meetings of the Sub-Committee appointed to examine the possibilities of manufacturing cement asbestos sheets in the State, had been convened, I desire to say that a meeting has been provisionally fixed to be held on Monday the 6th May 1940, at 3 P.M., in this office, and the members of the Sub-Committee, Messrs. S. G. Sastry and M. K. Narasimhan have been requested to attend and discuss the estimates etc. which have been prepared by me in this connection. Mr. S. G. Sastry seems to have passed on the letter of intimation to Mr. Parthasarathi, Acting Director, Sandalwood Oil Factory, for his information and needful and the latter officer has asked me to be informed if he could attend the meeting as Director of Sandalwood Oil Factory or whether the membership is personal to Mr. Sastry. It is in this connection I have written to you my D.O. letter dated (camp) Sulekere 19th April 1940 for the required information and I would request you kindly to let me know immediately whether Mr. Sastry or Mr. Parthasarathi, as Acting Director, Sandalwood Oil Factory, has to attend the meeting to enable me to request the person concerned to attend the meeting.

As soon as the meeting is held, the resolution of the Sub-Committee meeting will be duly intimated to you as desired.

Yours sincerely,

B Rama Rao

V. Venkatachar, Esq., M.A., B.Com.,
Secretary,
Board of Industries & Commerce,
BANGALORE.

B.R.R.

The membership of the Sub-committee is personal to Mr. Sastry.

As per order of The Chairman
P.C.O

I have informed the Dr of Geology
of this over the phone today.
Please send a letter
confirming this today
M
26.4.18

Immediate.

No. 699 Issued 29/4

26th April 40

Dr.V.Venkatachar,M.A.,B.Com.,
xxxxxxxxxxxxxxxxxxxx

Dear Sir,

With reference to your letter No.1 dated 19th April 40 and letter No.G.2103 dated 25th April 1940, requesting me to let you know whether the membership to the Cement Asbestos Sub-Committee is personal to Mr.S.G. Sastry or if the Director Sandal Oil Factory is a member; I am directed to state that the Chairman of the Board has ordered that the membership of the Sub-Committee is personal to Mr.S.G. Sastry.

A copy of this letter is also sent to Mr.K. Parthasarathi, Director of Sandal Oil Factory for his information.

I request you kindly to take further action in the matter.

Yours sincerely,

B.Rama Rao, M.A.,(Cantab.),D.I.C.,F.G.S.,
Director of Geology in Mysore,
Bangalore.

sd/ V.Venkatachar.

P.T.O.

No. 700

Copy of the foregoing is forwarded with compliments to Mr.K.Parthasarathi, Ag. Director of Sandal Oil Factory, Mysore, for information.

Secretary,

Issued

PROCEEDINGS OF THE MEETING OF THE CEMENT-ASBESTOS SUB-COMMITTEE, held in the Office of the Director of Geology on 6th May 1940, at 3 P.M.

Convenor:- Mr. B. RAMA RAO, M.A., D.I.C., F.G.S., F.N.I., Director of Geology in Mysore.

Members:-1. Mr. S. G. Sastry, B.A., M.Sc., F.C.S., Director, Sandalwood Oil Factory, Mysore.

2. Mr. M.K. Narasimhan, B.A., Superintendent, Cement Factory, Bhadravati.

All were present.

In placing before the Committee, a preliminary report furnishing details of trial experiments on the preparation of cement-asbestos sheets, conducted by the Geological Department, and an estimate for setting up a plant to manufacture cement-asbestos sheets in Mysore, the Director of Geology explained that after conducting detailed prospecting operations on the asbestos deposits in the Holenarsipur taluk, the available quantity of the mineral has been estimated to be about 8,000 tons. Since this asbestos is not of good spinning fibre quali and therefore not suitable for high class asbestos products such as; asbestos cloth, asbestos ropes, mill boards etc., he suggested, that its use in the manufacture of asbestos cement sheets could be considered in view of the fact that there is an ever increasing demand for the cement-asbestos products in the market. He added that the preliminary experiments carried on in the laboratory of the Geological Department have shown that it is possible to prepare good sheets of the required standard; explaining, however, that the sheets now prepared have not been actually got tested for their tensile and crushing strengths. With these preliminary remarks, he invited discussion on the subject by the members.

Mr. S. G. Sastry stated that he has been interesting himself with this question from a long time. He informed that, to have the suitability or otherwise of the Holenarsipur asbestos for making cement asbestos sheets tested, he had sent a large bulk sample to Germany for expert opinion and that he was given to understand that though the material was good looking in appearance, owing to its brittleness and poor quality of the fibre it would not be found suitable for the purpose; and usually for making cement asbestos sheets better qualities of asbestos would be used. Mr. Sastry stated also, that some cement asbestos companies in Northern India having tried our asbestos, some years back, gave it up as unsuitable, and are at present getting the material from outside. In spite of these discouraging reports, some sheets, however, were got prepared by him at the Sandalwood Oil Factory and from what could be seen they seem to have come out quite well. Mr.Sastry stated that as has been done in the laboratory of the Geological Department he has also tried several proportions of Holenarsipur asbestos and cement, and in some experiments, mixtures of different proportions of Mysore and foreign asbestos with Mysore cement. The Sandalwood Oil Factory has prepared sheets, tiles and other articles of different dimensions.

Mr. Sastry pointed out that since the total quantity estimated is only 8,000 tons, enough to meet the demands of the proposed Factory for 10 to 12 years, the quantity is too small for any large scale undertaking. He asked if there are any other deposits in the State to supplement this quantity. The Director of Geology replied that the other deposits are all very small and cannot be relied on to yield large quantities. He explained that the quantity of asbestos estimated from the Holenarsipur deposits are for a depth of 50 feet as proved now, but during the regular course of mining we may be able to get more than the estimated quantity especially if

if the veins continue deeper than 50 feet.

Mr. M. K. Narasimhan suggested that regular tests might be conducted with the cement asbestos sheets prepared with different proportions of the raw materials, to see if the sheets locally prepared come up to the required standard.

The Director of Geology expressed that though the foreign experts have not furnished any encouraging reports it is desireable to verify whether the sheets which could be prepared by using our asbestos and cement, come up or not to the required standard by subjecting the prepared material to rigid tests for the crushing and tensile strength etc. before we could reject our asbestos as absolutely unsatisfactory for the purpose in view.

After some further discussions on allied matters, the following resolutions were adopted : -

In view of the fact that an average large sample of Mysore asbestos, sent by Mr. S. G. Sastry, to Germany, has been reported as not to possess the requisite properties for preparing cement asbestos sheets of standard specifications and that for preparing such sheets better qualities of asbestos are used, it was resolved that:

1. Test asbestos sheets of the required size and shape should be prepared out of a suitable mixture of Holenarsipur asbestos and Chamundi cement, both by the Geological Department and the Sandalwood Oil Factory and these shoudd be got tested at the Engineering College, Bangalore, for crushing and tensile strength and other physical properties to ascertain if the sheets prepared out of the Mysore materials would come up to the standard specifications;

2. After ascertaining the results and if they are favourable, the question of setting up a plant for the manufacture of cement asbestos sheets, as a separate concern or as an adjunct to the Cement Factory at Bhadravati, be taken up for consideration;

3. In view of the fact that the supply of asbestos from the Mysore deposits is limited, it should also be ascertained if asbestos of the required grade could be imported, at a reasonable price, to supplement our resources, in future, if any such need arises.

.....

B Rama Rao

CONVENOR.

BOARD OF INDUSTRIES AND COMMERCE.

Q.O. 775
on file

Cement Asbestos Sub-Committee.

Submitted.

Copy of the proceedings of the Cement Asbestos sub-committee meeting held on 6th May 1940 received from Mr.B.Rama Rao, Director of Geology in Mysore (Convenor of the Committee) is herewith put up, together with the connected file, for kind perusal and orders.

Dated, 16th May 1940

W
Secretary.
I/c.

Director) Absent from H.Q. on tour

Chairman)

Board of Industries and Commerce.

Cement Absestos Sub-Committee.

Submitted.

Copy of the Proceedings of the meeting held 6th M
of the Cement Asbestos Sub-Committee, received from Mr.B.Rama Rao, Director of Gelology in Mysore who is convenor of the meeting, is herewith submitted for kind perusal and orders.

Secretary.

Dated, 15th May 1940

Director)

Chairman)

Mr. B. RAMA RAO, M.A., D.I.C., F.G.S.,
Director of Geology.

MYSORE GEOLOGICAL DEPARTMENT,

D. O. No. G. 2770 / Enc 3. Bangalore, 11th May 1940.

Dear Sir,

I have herein enclosed copies of the proceedings of 3 of the Sub-Committee meetings of which I am the Convenor, held in this office on :

4th May 1940 - Manufacture of Hydraulic Lime.

6th May 1940 - Manufacture of Cement asbestos sheets.

7th May 1940 - Manufacture of Alum and Aluminium Sulphate.

Yours sincerely,

B. Rama Rao

V. Venkatachar, Esq., M.A., B.Com.,
Secretary,
Board of Industries & Commerce,
BANGALORE.

for HSR

(1) Clear with thanks
(2) put up with connected papers for proceedings
Papers in files
for The Chairman
14-5-40

780

16th May 19

V.Venkatachar,Esq.,M.A.,B.Com.,
xxxxxxxxxxxxxxxxxxxxxx

Dear Sir,

I acknowledge with thanks the receipt of the following Proceedings of the Sub-Committees meetings, sent with your letter No.G.2770 dated 11th May 1940

1) Manufacture of Hydrated Lime.
2) " of Cement Asbestos sheets.
3) " of Alum and Aluminium Sulphate.

These will be submitted to the Chairman for kind perusal and orders.

Yours sincerely,

B.Rama Rao,Esq.,M.A.,D.I.C.,F.G.S.,
Director of Geology in Mysore,
Bangalore.

D. I. C.

Case No. ..... *of 194*

NOTE.

BOARD OF INDUSTRIES AND COMMERCE.

Subject:— Cement Asbestos Sub-Committee.

No. 2.0.775
one file

OFFICE OF THE
FIRST MEMBER OF COUNCIL
MAY 17 1940
No. 10806

Submitted.

Copy of the proceedings of the Cement Asbestos sub-committee meeting held on 6th May 1940, received from Mr.B.Rama Rao, Director of Geology in Mysore (Convenor of the Committee) is herewith put up, together with the connected file, for kind perusal and orders.

Dated, 16th May 1940

Secretary.

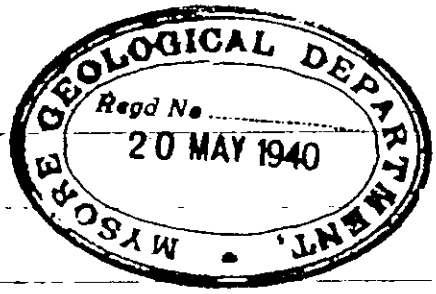
Director) Absent from H.Q.

Chairman) 19/5/40

W 21.5.40

5861—G.P.B.—12,000—17-4-40

Mr. S.G. Sastry, B.A., M.Sc.(Lond),
Director,
Sandalwood Oil Factory, Mysore.
(on leave).



Camp Bangalore,
18th May 1940.

Dear Sir,

I enclose herewith my T.A. bill for having attended the two sub committee meetings held under your Chairmanship in your office on 6th and 7th of this month. I shall be obliged if you will kindly arrange to have the T.A. bill admitted in audit.

Yours sincerely,
S Sastry

Act 48 (2)

B. Rama Rao, Esq., M.A., D.I.C.(Lond), F.G.S.,
Director of Geology, (F.N.I.,
Bangalore.

This may be forwarded to the Secy
Board of Arts & Commerce for necessary.
a/3144. BM/18/5/40
Memo No 2832 Dated 20th May, 1940.
Forwarded, with compliments, to the Secretary, Board of Industries and Commerce, Bangalore, for favour of needful.

Dy Dir
24/5/40

B Rama Rao
Director,
Mysore Geological Department.
20/5

788 Dear Bill

24th May 1940.xxx

V.Venkatachar Esq., M.A.,B.Com.,
XXXXXXXXXXXXXXXXXXXXXX

Dear Sir,

The Director of Geology has forwarded to me your T.A. bill for having attended the two Sub-Committee meetings regarding Manufacture of Alum and Cement Asbestos, for arranging payment.

I am desired to invite a kind reference to Art.48(e) of P.C.A.C. which states that the T.A. of officers on whatever duty is to be drawn from the same source from which their pay is drawn. The allowances are therefore debitable to the Sandalwood Oil Factory. I therefore request you to kindly draw the amount from the Sandalwood Oil Factory funds.

The bill is also returned for kindly doing the needful.

Yours sincerely,

Sd/- V. Venkatachar.

S.G. Sastry Esq., B.A.,M.Sc.,F.C.S.,
Director of Sandalwood Oil Factory (on leave)
Mysore.

SGR-3)

P.T.O.

No 789 Emy

Copy with compliments to the Director of Geology in Mysore, Bangalore, for information with reference to his No.2832 dated 20th May 1940.

Secretary.

B.S. & Ste. J.

To

3 Copies

Bk 23/5/09

Dear Sir,

The Dr of Geology has forwarded for Sub Committee meetings re: Examination of Alum & cement Asbesto, for arranging ~~asbest~~ payment

I am desired to quote a Govt Reference to Art 48 (e) of M.C.A.C. ~~and~~ regarding the T.A and under ~~this Art~~ the ~~above~~ T.A is to be debited to ~~the~~ ~~Sub. of Dept~~. Which ~~clearly~~ states that the T.A Officers on whatever duty is to be drawn from the Home Annex from which their pay is drawn. The allowances are therefore debitable to S.O.T. I therefore request you to kindly ~~draw~~ draw the amt from the S.O.T funds

The bill is also returned for kindly doing the needful.

Yours Sincy

S. G. Sastry, Esq. B.A. Mysore
Dr. S.O.T. (on Leave)

W

Bk 28/5/09

Mysore

Copy W/L to Dr of Mys. Bl. for [illegible]

Bd 3 Pte

To

Dear Sir

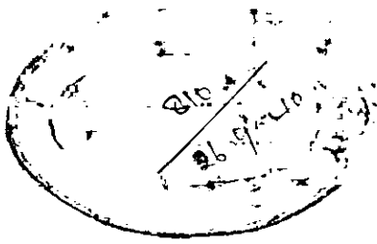
Yours J. A bill for May
for having attended the two Sub-
Committee meetings ~~f~~ Regarding
Cement Asbestos Slates & Alum
Lamb f

CENTRAL INDUSTRIAL RESEARCH BOARD.

---

15. Manufacture of Cement Asbestos.:-

The Committee have resolved that further experiments should be carried out at the Sandal Oil Factory and Geological Department re. Test Asbestos sheets, etc.



G. R. Krishnan
Contractor
Arlepet
Tumkur.

To.

The Director.
Mysore Sandle Oil Factory
Mysore Government
Mysore South.

Subject: Stock of Decomposed and Thrown out Asbestos and waste Mica Stock lying at Paint and Lac Works

Respected Sir

I beg to bring to your kind notice that Last year I had offered for the above Stock Rupees Fifty. I am Now making another Offer for Rs 100/-

I am Prepared to Buy the Stock for Rs 100/- as it is, if your Sanction the same as an early Date.

On Hearing from you, Later in the Matter I Shall arrange to deposit Money Rs 100/- and take Delivery of the Same

Thanking you in Return

Yours faithfully

G. R. Krishnan

Kindly this may be sent to the Officer in charge of SO.7 for opinion. 24/7/40

The idea is that SO.7 should make use of the existing stock of asbestos for manufacture on a small scale basis. Communication will be sent to SO.7 by

V
10/9/40

the Secy Central Research Board

27/9

Subject

It is ordered on the reverse that a Separate Communication will be made to the Dr. S.O.f. by the Secy. I.R.B re: Stock of asbestos.

The Dr. of S. has been written to furnish the local demand for Boiler Composition. This reply is still awaited. In the meanwhile, the Dr. S.O.f. might be intimated of the arrangements the Board is expecting to make.

Yes.

9/12

Forwarded.

8/12/40

Dy Chief Engr

14/12/40

G.R.Krishnar Esq.,
Contracto , Arlepet,
Tumkur.

Mysore. --------

20/

Mysore. 29th Septr. 40

Dear Si-,

Re: sale of Asbestos.

With reference to your letter dated 24th instant offering to purchase the above for Rs.100/-, we write to inform you that we have no idea of ~~its disposal~~ to dispose of it.

Yours faithfully,

Director.

Government of Mysore.

No. 32/401 Industries

Office of the Secretary,
Bangalore Dated, the 15th November 1940.

From: K.Parthasarathi, Esq., B.A.,
Secretary, Industrial Research Board, Bangalore.

To: The Director of Industri s and Commerce in Mysore,
Bangalore.

Sir,

Subject: Boiler Composition.

I am directed to request you kindly to furnish to the Board, as promised by you in the last meeting, detailed information regarding the existing local demand for Boiler composition, with a forcast of future demand.

I have the honor to be,
Sir,
Your most obedient servant,

Secretary
Industrial Research Board.

3. Mr. B. H. Krishna, M.Sc., A.I.C., Industrial and Testing Laboratory.
4. Dr. B. L. Manjunath, B.A., D.Phil., M.Sc., Professor of Organic Chemistry, Central College, Bangalore.
5. Dr. P. C. Guha, D.Sc. (Cal.), the Indian Institute of Science.
6. Dr. L. S. Doraswami, M.Sc. (Lond.), Ph.D., Economic Botanist.
7. Mr. M. S. Krishna Rao, Superintendent, Government Soap Factory.
8. Dr. M. N. Ramaswamy, M.Sc., D.Sc., Forest Research Chemist, Forest Research Laboratory.
9. Mr. B. Sanjeeva Rao, B.A., M.Sc. (Mad.), F.I.I.Sc., the Indian Institute of Science.

The Government Director, Industrial Concerns, pointed out that due to War, the cost of essential oils had gone up considerably and the imports had fallen-off considerably. It was unanimously agreed that for such of the essential oils for the distillation of which raw materials are locally available, immediate steps should be taken to manufacture them after ascertaining the demand and commercial possibilities. The Board was of opinion that the cultivation of important herbs should be pursued. The Chairman pointed out that the cultivation of cinchona was being extended in the Kadur District. The Director, Sandalwood Oil Factory, suggested that geranium might be grown in the premises of the Sandalwood Oil Factory, as the sample oil distilled from the geranium grown experimentally in the Soap Factory compound was very good and better than the imported material and that the plants could be easily grown and there was a potential market in India for the oil at remunerative prices.

The Chairman finally observed that immediate attempts should be made to encourage private persons to grow geranium and the question of distillation taken up by the Sandalwood Oil Factory.

(15) *Manufacture of Cement Asbestos.*—

Present Personnel.

1. The Director of Geology in Mysore (*Convenor*).
2. Mr. S. G. Sastry, B.A., M.Sc. (Lond.), Director of Sandalwood Oil Factory
3. Mr. M. K. Narasimhan, B.A., Cement Factory, Bhadravati.

After reviewing the work done, the Chairman observed that this question might be dropped.

The question of disposing of the stock of asbestos in the Sandalwood Oil Factory, Mysore, was brought up by the Director of Sandalwood Oil Factory.

The Director of Industries and Commerce said that the existing stock (in the Sandalwood Oil Factory, and with the Director of Geology) might be converted into boiler composition—a simple industry—and at a later stage handed over to private enterprise. The Director, Sandal Oil Factory, said that about 50 tons were available in Mysore. The Director of Industries and Commerce promised to furnish very early the local demand for boiler composition.

(16) *Manufacture of Potassium Permanganate.*—The Director of Geology said that the work was in progress and that final report from the chemist on this special work was awaited.

(17) *Manufacture of Abrasive materials such as Corundum Wheels, Sand Paper, etc.*—It was decided to delete this subject.

(18) *Production of Cinchona.*—It was resolved that the report from Dr. M. N. Ramaswamy be placed before the Committee.

(19) *Manufacture of Water-proof fabrics.*—The Chairman observed that this subject might be left to the Textile mills.

(20) *Mixture of Petrol and Power Alcohol.*—This subject was also decided to be deleted.

(21) *Testing of Textile Samples.*—This subject was also decided to be deleted.

(22) *Sulphur.*—The Director of Geology was requested to expedite the work in connection with the location of sulphur in the State.

(23) *Manufacture of Copper-sulphate.*—Since the Mysore Chemical Manufactures, Ltd., have already been manufacturing this chemical in their works at Turbanahalli, it was resolved to delete this subject.

(24) *Manufacture of Sodium-bichromate.*—The Chairman wanted to know the progress with regard to the construction of buildings and the erection of plant.

The Government Director, Industrial Concerns, and Dr. Krishnaswamy explained the position and said that the work was progressing expeditiously.

II. The next subject considered was Dr. A. V. Varadaraja Iyengar's proposition with regard to the utilization of molasses for the production of potassium salts.

The scheme of Dr. Varadaraja Iyengar was examined. Dr. Krishnaswamy suggested that the question of Tartaric-acid manufacture could conveniently be taken up later, after investigating the availability of green tamarind and that in the meantime, the recovery of potash salts from molasses might be taken up immediately. The Director of Sandalwood Oil Factory read out the discussion he had with Sir M. O. Forster regarding the advisability of taking up this scheme Dr. Krishnaswamy further suggested that a sub-committee might be appointed to go into this subject and advise the Board.

The Chairman desired to know the working costs involved with full details.

It was finally decided to request Dr. Varadaraja Iyengar to furnish details with regard to cost, etc., to handle ten tons of molasses as an experimental measure, in the proposed Pilot plant, to be placed before the Committee at its next meeting.

III. The starting of a Glue Factory was the last proposition discussed. After a preliminary discussion, the Director of Industries and Commerce was requested to complete the necessary inquiries and get complete statistical information for being placed before the House at its next meeting.

It was the opinion of the House that this was a proposition in which the Mysore Tanneries, Ltd., should interest themselves.

The Chairman thanked the members and the meeting terminated.

K. PARTHASARATHI,
Secretary.

N. MADHAVA RAU
Chairman.

WD 786—GPB—100—21-11-40

CONFIDENTIAL.

INDUSTRIAL RESEARCH BOARD.

Proceedings of the First Meeting of the newly constituted Industrial Research Board Sub-Committee held on Tuesday the 3rd September 1940, at 1 P.M. at the Chambers of the First Member of Council.

PRESENT.

Rajamantrapravina N. Madhava Rau, Esq., B.A., B.L.,
First Member of Council (*Chairman*).

Members.

1. Mr. M. Venkatanaranappa, B.A.,
Chairman, Mysore Iron and Steel Works, etc.,
Bhadravati.
2. Mr. B. G. Appadorai Mudaliar, B.A., B.Sc., A.M.I., M.E.,
Director of Industries and Commerce in Mysore,
Bangalore.
3. Mr. K. Parthasarathi, B.A.,
Ag. Director, Sandalwood Oil Factory,
Mysore.
4. Mr. E. V. Ganapathi Iyer, B.Sc.,
Government Director, Industrial Concerns,
Bangalore.

Mr. K. Parthasarathi, B.A.,
Ag. Director, Sandalwood Oil Factory,
Mysore (*Secretary*).

Mr. C. E. Noronha, M.A., Secretary to Government, Development Department, Dr. K. R. Krishnaswami, B.A., D.Sc. (Lond.), F.I.C., Indian Institute of Science, and Mr. B. Rama Rao, M.A., D.I.C., Director of Geology, were also present by request.

GENERAL.

Opening the proceedings of the regular meeting, the Chairman referred to the agenda circulated to the members and said that the review of work done by the several sub-committees constituted by the Research Bureau Sub-Committee on 7th November 1939 may be taken up for consideration.

(1) *Manufacture of Super-phosphates.*—The progress of work done by this Committee was read out.

Present Personnel.

1. Dr. J. C. Ghosh, D.Sc., F.N.I.,
Director, Indian Institute of Science (*Convenor*).
2. Mr. S. G. Sastry, B.A., M.Sc. (Lond.), F.C.S.,
Director, Sandalwood Oil Factory.
3. Dr. K. R. Krishnaswamy, B.A., D.Sc. (Lond.), F.I.C.,
Indian Institute of Science.
4. Mr. E. V. Ganapathi Iyer, B.Sc.,
Government Director, Industrial Concerns (new member from 4th September 1940).

Dr. Krishnaswamy explained the details of the experiments conducted by him in respect of phosphatic nodules of Trichinopoly. The suggestion of the Committee to depute an officer of the Geological Department was also considered. The Chairman observed whether it was necessary to depute an officer, when other raw materials are locally available for the manufacture of super-phosphates.

Mr. E. V. Ganapathi Iyer stated that Messrs. Parry & Co., Madras, are manufacturing super-phosphates out of bones collected from various parts of South India and making large profits. He said that some experiments are being conducted in the Mysore Chemicals and Fertilisers, Ltd., Belagula, and he would be suggesting independently to Government to start a fertiliser industry. The Chairman remarked that the very idea of starting the Mysore Chemicals and Fertilisers, Limited, was to develop a fertiliser industry in the State and there was no necessity to have a separate factory to manufacture fertilisers. Dr. Krishnaswamy explained to the house that the manufacture of super-phosphates from bones is a simple proposition and could be advantageously pursued.

The Chairman desired to know if statistical information with regard to the availability of bones in the State could be had from the Market Survey reports of the Department of Industries and Commerce. The Director of Industries and Commerce stated that plenty of bones were available in the State, particularly in the Malnad area, and promised to furnish complete information to the Board at its next meeting.

It was resolved that the sub-committee should investigate the position as regards raw materials, the availability of market, equipment necessary with working costs, etc.

The Chairman suggested that Mr. E. V. Ganapathi Iyer, Government Director, Industrial Concerns, may also serve as a member on this sub-committee.

(2) *Manufacture of Hydrated Lime.*—

Present Personnel.

1. Mr. B. Rama Rao, M.A., D.I.C.,
   Director of Geology (*Convenor*).
2. Dr. H. S. Sharma, PH.D. (Lond.), D.I.C. (Lond.),
   Chemist, The Mysore Paper Mills, Ltd.,
   Bhadravati.
3. Mr. Balakrishna, B.A.,
   Mysore Iron and Steel Works,
   Bhadravati.
4. Mr. G. Gundu Rao, M.SC., A.I.I.SC.,
   The Mysore Sugar Co., Ltd., Mandya.

The Chairman remarked that further experiments should be continued at Bhadravati and also at the Porcelain Factory, and this subject may be omitted from the list.

(3) *Manufacture of Ferro-Manganese, Ferro-Silicon, etc.*—The Chairman, Mysore Iron and Steel Works, explained that the scheme for the installation of 1·500 K. V. A., electric furnace for the manufacture of Ferro-alloys had since been sanctioned by Government and that further work was in progress. Since this question had reached a stage when no further advice was necessary, the Chairman observed that further consideration of this subject might be dropped.

(4) *Magnesite Bricks.*—The Chairman, Mysore Iron and Steel Works, stated that the Indian raw material was stated to be unsuitable for the manufacture of magnesite bricks and that the Works, at present, imported these bricks from Japan, and they were giving satisfactory results. Dr. Krishnaswamy stated that as the Indian material being far too pure, the results may not be satisfactory and suggested that further expriments might be conducted at the Porcelain Factory, when the tunnel kiln was ready.

(5) *Grinding Bodies for the Cement Plant.*—The Chairman, Mysore Iron and Steel Works, explained in detail the experiments conducted at the Works.

The Committee opined that it would not be possible to manufacture these at economical rates.

It was resolved to delete this subject.

(6) *Manufacture of Caustic Soda.*—

Present Personnel.

1. Mr. E. V. Ganapathi Iyer, B.Sc.,
   Government Director, Industrial Concerns (*Convenor*).
2. Mr. S. G. Sastry, B.A., M.Sc., (Lond),
   Director, Sandalwood Oil Factory.
3. Mr. B. K. Ramprasad, M.A. (Hon.), D.Sc., M.I.E. (Ind.),
   Government Electrical Department.
4. Dr. K. R. Krishnaswamy, B.A., D.Sc. (Lond.), F.I.C.,
   Indian Institute of Science.
5. Mr. B. Rama Rao, M.A., D.I.C.,
   Director of Geology (new member from 4th September 1940).

The Government Director, Industrial Concerns, pointed out that the Sub-Committe had already sent its recommendation to manufacture this chemical.

The Director of Sandalwood Oil Factory read out the recommendation referred to by the Government Director, Industrial Concerns. The Government Director, Industrial Concerns, explained the implications involved and stated that as there were no manufacturers in South India and as there was a ready market, the chemicals could be readily sold.

There was a general discussion about the Lime-stone deposits in which the Director of Geology and Dr. Krishnaswamy actively participated. It was pointed out that the demand for soda-ash and also chlorine obtained as a bye-product in the manufacture of Caustic-soda and the possibilities of utilising chlorine in the manufacture of super-bleach and bleaching powder should be examined.

It was resolved that the Sub-Committee be requested to carefully re-examine the visible market for the chemicals and other bye-products, plant and equipment required, with capital and running costs involved, etc., and to favour the Board with a comprehensive report.

The Chairman said that Mr. B. Rama Rao, Director of Geology, might also serve on this Committee.

(7) *Manufature of Glauber Salt.*—The quantity of Glauber Salt available as a bye-product in the manufacture of Sodium-bichromate being very small, it was decided that the question might be dropped from further consideration. It was, however, considered that the manufacture of Sodium Sulphite should be kept in view in connection with the scheme for the manufacture of Acetic-acid.

(8) *Manufacture of Alum.*—

Present Personnel.

1. Mr. B. Rama Rao, M.A., D.I.C.,
   Director of Geology (*Convenor*).
2. The Director of Public Health.
3. Mr. S. G. Sastry, B.A. M.Sc. (Lond.),
   Director of Sandalwood Oil Factory.
4. Dr. B. K. Ramprasad, M.A. (Hons.), D.Sc., M.I.E. (Ind.),
   Government Electrical Department.
5. Mr. N. K. Seshadri Iyengar, B.A. M.Sc.,
   The Mysore Paper Mills, Ltd.

In view of the fact that the Mysore Chemical Manufactures, Ltd., had interested themselves in the manufacture of alum, and as, so far as the Board were

aware, no special problems were involved, it was decided that this subject might be deleted from the list.

(9) *Manufacture of Carbon Electrodes.*—

1. Dr. B. K. Ramprasad, M.A. (Hons.), D.Sc., M.I.E. (Ind.) (*Convenor*).
2. Mr. D. V. Krishna Rao, B.A.,
   Mysore Iron and Steel Works.
3. One Chemist from the Mysore Paper Mills, Ltd., and
4. One from the Indian Institute of Science.

The progress of work done by this Committee was noted with satisfaction. Dr. Krishnaswamy said that at the Indian Institute of Science, experiments were being conducted at the instance of Government of India. The Chairman, Mysore Iron and Steel Works, pointed out that the experiments were being continued in the Iron Works as well.

It was resolved to request the Sub-Committee to get the results of experiments and to go into further details and to furnish a report to the Board as early as possible.

(10) *Manufacture of Soaps required by the Textile Mills.*—The Government Director, Industrial Concerns, explained that textile soap of good quality was being manufactured and supplied by the Government Soap Factory. It was decided to delete this subject.

(11) *Manufacture of Plastics.*—

Present Personnel.

1. Mr. V. Paul,
   Indian Institute of Science.
2. Mr. Ahmedali,
   Chemist, Indian Institute of Science.
3. Mr. M. Srinivasaiya, B.A., F.I.I.Sc.,
   Indian Institute of Science.
4. Mr. V. Rama Rao, B.Sc.,
   Government Electric Factory.

After reviewing the work of the Committee, the Chairman pointed out that the Government of India was also interested in this proposition. The Chairman, Iron and Steel Works, suggested that as the Pilot Plant is being erected at Bhadravati, he could try to manufacture formaldehyde there.

The Chairman showed to the Members two sets of samples of Bakelite product—one set made out of local powder prepared at Bhadravati, and the other with imported powder. The samples from the local powder were found to be as good as those from the imported one.

Dr. Krishnaswamy said that Dr. J. C. Ghosh, Director, Indian Institute of Science, had full information about Bakelite powder and plastics in general.

It was decided that the Sub-Committee should be requested to pursue the investigation further and also to consider the commercial aspect of the proposition.

(12) *Manufacture of Copper-wire, Galvanised Pins, etc.*—Since regular work had commenced at the Electric Factory, it was decided to delete the subject.

(13) *Manufacture of Tube Glass.*—The Chairman observed that this subject might be deleted as it was receiving the attention of Messrs. The Mysore Glass and Enamel Works, who anticipated no serious technical difficulties.

(14) *Manufacture of Chemicals, Drugs and Essential Oils.*—

Present Personnel.

1. *Sastravaidyapravina* Dr. S. Subba Rao, B.A., M.B.C.M., L.R.C.P. (Lond.), M.R.C.S. (Eng.), D.P.H., Retired Senior Surgeon. (*Convenor.*)
2. Dr. B. T. Narayan, B.A., Ph.D., D.Sc., Bio-Chemist, Department of Agriculture.

Industrial Research Board.

No.173/40-41

Office of the Secretary,
Mysore Road,
Bangalore, Dated 18 December 1940.

From

K. Parthasarathi, Esq., B.A.,
Secretary, Industrial Research Board,
Bangalore.

To

S.G. Sastry, Esq., B.A., M.Sc., (Lond),
Director, Sandalwood Oil Factory,
Mysore.

Sir,

I am directed to invite a kind reference to page 5 of the printed proceedings of the Board forwarded to you some time back. In this meeting the question of disposing of the stock of asbestos held by Sandalwood Oil Factory was brought up by the Acting Director, Sandalwood Oil Factory. The Director of Industries and Commerce suggested that the existing stock might be converted to Boiler Composition and that he would furnish the local demand for the same. The Director of Industries and Commerce has been requested to expedite his reply, and a copy of this letter will be forwarded to you soon after its receipt for necessary action.

I have the honor to be,
Sir,
Your most obedient servant,

Secretary,
Industrial Research Board.

Tels.—" INDUSCOM." *Codes used*—A.B.C., 5th Edn., Bentleys,

GOVERNMENT OF MYSORE.

Department of Industries and Commerce.

OFFICE OF THE DIRECTOR,
INDUSTRIES AND COMMERCE

No. F Mis. / Boilers
Enc.

Bangalore, dated the 13th January 1941

15.

The Secretary,
Industrial Research Sub-Committee,
(Government Electric Factory)
Mysore Road, Bangalore.

Dear Sir,

Boiler lagging composition

Referring to the proceedings of the last meeting of the Industrial Research Sub-Committee on the above subject, I am to state, for your information, that there are 246 boilers in the State and the approximate annual requirements of Boiler lagging material are estimated at about 100 tons.

OFFICE OF THE SECRETARY INDUSTRIAL RESEARCH COMMITTEE BANGALORE
No. 131
Date 16/1/41

NRM:2

Yours faithfully,

L. Thimmiah
for Director.

13/1/41

Industrial Research Board.

No. 319/40-1 Bangalore, Dated, 16-1-1941.

From

K. Parthasarathi, Esq., B.A.,
Secretary, Industrial Research
Board, Bangalore.

To

The Director of Sandalwood Oil Factory,
Mysore.

Sir,

Subject: Asbestos.

--

In continuation of this office letter No. 173/40-41 dated 18th December 1940, on the above subject, I am directed to inform you that the Director of Industries and Commerce has since intimated that there are 246 boilers in the State. The approximate annual requirements of Boiler lagging material being estimated at about 100 tons

I am to request you to be so good as to take necessary further action in this behalf.

I have the honor to be,
Sir,
Your most obedient servant,

sd. K.Parthasarathi.

Secretary.

No.320 Dated, 16th January 1941.
40-1

Copy of the foregoing is forwarded with compliments to the Director of Geology in - Mysore; Bangalore for information and necessary further action.

Secretary,
Industrial Research
Board.

Industrial Research Board.

No. 32/40-1 Bangalore, Dated, 17th January 41.

From

K. Parthasarathi, Esq., B.A.,
Secretary, Industrial Research
Board, Bangalore.

To

B. Rama Rau, Esq., M.A., D.I.C., F.G.S.,
Director of Geology in Mysore,
Bangalore.

Sir,

Subject: Manufacture of Cement Asbestos.

I am directed to request you to be so good as to intimate if any progress has been achieved in the matter of Cement Asbestos sheets.

I have the honor to be,
Sir,
Your most obedient servant,

Secretary.

WD C5858—GPB—35,000—3-5-40

19 .

From

The Director,
Mysore Geological Department,
Bangalore.

To

The Secretary,
Industrial Research Board,
Bangalore.

Dated 26th February 1941.

Despatched

Received

~~General~~ No. G. 1888.
No.

Enclosure No.

S i r ,

With reference to your letter No.321/40-1 dated 17th January 1941 regarding manufacture of Cement Asbestos, I have the honour to state that Mr. T.P. Krishnachar, Sub-Assistant Geologist, who was carrying on investigations in this - - - connection has been halting in camp engaged in mining work and all the other officers of the Department are also at present engaged in field work away from head-quarters. Until the - officers return to headquarters in June 1941, it will not be possible to conduct any further investigations in the matter.

I have the honour to be,
Sir,
Your most obedient servant,

BRamaRao

D I R E C T O R ,
Mysore Geological Department.

1) Acknowledge
2) Put up with the file

3/3/41

OFFICE OF THE SECRETARY INDUSTRIAL RESEARCH BOARD BANGALORE. No. 239 Date 4/3/41

M.O.26/2.

Confidential

INDUSTRIAL RESEARCH BOARD

Proceedings of the Second Meeting of the Industrial Research Board Sub-Committee, held on Saturday the 15th March 1941 at 1 p.m. at the Chambers of the First Member of Council.

PRESENT

Rajamantrapravina N. Madhava Rau, Esq., B.A.,B.L.,
First Member of Council. (*Chairman*).

MEMBERS

1. Mr. M. Venkatanaranappa, B.A.,
   Chairman, Mysore Iron & Steel Works, etc., Bangalore.
2. Mr. S. G. Sastry, B.A., M.Sc., (Lond.),
   Director, Sandalwood Oil Factory, Mysore.
3. Mr. B. G. Appadurai Mudaliar, B.A.,B.Sc.,A.M.I.,Mech. E.,
   Director of Industries & Commerce in Mysore, Bangalore.

   Mr. K. Parthasarathi, B.A.,
   General Manager, Government Electric Factory, Bangalore.
   (*Secretary*).

ATTENDED BY INVITATION

1. Mr. M. Venkatesa Iyengar, M.A.,
   Secretary to the Government of Mysore,
   Development Department, Bangalore.

ABSENT

1. Mr. E. V. Ganapati Iyer, B.Sc.,
   Government Director of Industrial Concerns, Bangalore.

AGENDA

1. Brief review of work done by various sub-committees.
2. Compilation of information *re* Industrial Researches in the State.
3. Scope and Functions of the Research Board.
4. Consideration of subjects proposed by :—

(*a*) Government Director of Industrial Concerns—Manufacture of glass bulbs, silk, worm guts, etc.

(*b*) Director of Industries & Commerce—suggesting that certain items of researches taken up by the Government of India may also be taken up here.

(*c*) General Manager, Government Electric Factory—Utilisation of steel shavings.

(*d*) Manager, Mysore Spun Silk Mills, Ltd., Channapatna—Manufacture of bobbins, shuttles, etc.

(*e*) Superintendent, Government Soap Factory—Cultivation of patchouli and geranium in the factory nursery.

(*f*) Dr. A. V. Varadarajaiengar, B.A., D.Sc., A.I.C., Indian Institute of Science—Manufacture of starch from sweet potato.

5. Any other Subjects.

GENERAL

The Chairman invited reference to the agenda circulated to members and said that the review of work done by the several sub-committees may be taken up for consideration.

Manufacture of Super-phosphates

PERSONNEL

(1) Dr. J. C. Ghosh, D.SC., F.N.I., Director of Indian Institute of Science, Bangalore. (CONVENOR)

(2) Mr. S. G. Sastry, B.A., M.SC., (Lond.), Director, Sandalwood Oil Factory, Mysore.

(3) Dr. K. R. Krishnaswamy, B.A.,D.Sc., (Lond.), F.I.C., Indian Institute of Science, Bangalore.

(4) Mr. E. V. Ganapati Iyer, B.Sc., Government Director of Industrial Concerns, Bangalore.

The proceedings forwarded by Dr. Ghosh, Convenor of this sub-committee, were read and recorded. The Director, Sandalwood Oil Factory, explained the work done by the sub-committee so far. It was resolved that further action might be taken in light of the sub-committee's report.

After general discussions, the chairman suggested that the Managing Director, Mysore Chemicals & Fertilisers, Ltd., might be asked to ascertain any reduction in the freight for the transport of bones from Goribidnur, Bangalore and other important outlying stations to Belagola would be helpful and what traffic could be promised.

(2) Manufacture of Hydrated Lime.

PERSONNEL.

(1) Mr. B. Rama Rau, M.A., D.I.C., Director of Geology in Mysore, (Convenor).

(2) Dr. H. S. Sharma, Ph.D. (Lond.), D.I.C. (Lond)., Chemist, Mysore Paper Mills, Ltd.

(3) Mr. V. Balakrishna, B.A., General Manager, Mysore Paper Mills, Ltd.

(4) Mr. G. Gundu Rao, M.Sc., A.I.I.Sc., Mysore Sugar Company, Ltd.

(5) Mr. M. M. Ganapati, Superintendent, Chemical Plant, Mysore Iron & Steel Works.

The Director of Industries and Commerce stated that the experimental batch of hydrated lime from kankary limestone was found by the Mysore Sugar Company to be as good as the imported variety.

The Chairman remarked that the Director of Geology might be requested to forward a detailed up-to-date report on the investigations *re* hydrated lime. It was also decided that the experiments should be continued at Bhadravati till definite results were obtained.

(3) Manufacture of Magnesite Bricks.

It was decided that as resolved in the last Board meeting further experiments might be conducted at the Porcelain Factory, when the tunnel kiln was ready and the Government Director, Industrial Concerns, be requested to take necessary action in the matter and send his report.

(4) Manufacture of Caustic Soda.

PERSONNEL.

(1) Mr. E. V. Ganapati Iyer, B.Sc., Government Director of Industrial Concerns, (Convenor)

(2) Mr. S. G. Sastry, B.A., M.Sc., (Lond.), Director of Sandalwood Oil Factory.

(3) Dr. B. K. Ram Prasad, M.A., (Hon.), D.Sc., M.I.E., Government Electrical Department.

(4) Dr. K. R. Krishnaswamy, B.A., D.Sc., F.I.C., Indian Institute of Science.

(5) Mr. B. Rama Rau, M.A., D.I.C., F.G.S., Director of Geology in Mysore.

The proceedings of the sub-committee were recorded. It was noted that the sub-committee had requested Dr. Krishnaswamy to draw up a scheme in consultation with Mr. S. G. Sastry, for the consideration of the sub-committee. It was decided to await the further report of the sub-committee.

(5) Manufacture of Graphite Electrodes and other Products.

PERSONNEL.

(1) Mr. D. V. Krishna Rao, B.A., Mysore Iron and Steel Works, (Convenor).

(2) Dr. B. K. Ram Prasad, M.A. (Hon.), D.Sc., M.I.E., Government Electrical Department.

(3) One Chemist from the Mysore Paper Mills, Ltd.

(4) One from the Indian Institute of Science.

The brief review of work done by the sub-committee was read out and the proceedings of the sub-committee were recorded. The scheme submitted by Mr. P. S. Narayana, Consulting Industrial Geologist, on the manufacture of Graphite products in the State (forwarded by Government) had been considered by the sub-committee which was of opinion that the scheme was superficial, wanting in details. The Board accepted the opinion of the sub-committee.

The Chairman, Mysore Iron and Steel Works, gave a brief account of the experiments conducted at Bhadravati re : Graphite Electrodes and said that the results of experiments were very encouraging. After discussion, the following resolutions were adopted :—

(1) that the experiments on Graphite Electrodes etc., at Bhadravati should be continued expeditiously.

(2) that the facilities required to continue the experiments might be given to the Officers of the Mysore Iron & Steel Works at the Government Electric Factory.

(6) Manufacture of Plastics.

PERSONNEL.

(1) Mr. V. Rama Rau, B. Sc., Government Electric Factory. (Convenor),

(2) Mr. Mohamadali, B.Sc., Mysore Iron & Steel Works.

(3) Mr. V. Paul, M.Sc., Mysore Iron & Steel Works.

(4) Mr. M. Srinivasaiya, B.A., F.I.I.Sc., Indian Institute of Science.

(5) Mr. S. G. Sastry, B.A., M.Sc. (Lond.), Director of Sandalwood Oil Factory.

The Chairman, Mysore Iron & Steel Works, gave a brief account of the work done at Bhadravati so for. He informed the members that the formaldehyde plant had since been erected, and the production of powder in the pilot plant was about 50 lbs. a day for the present.

The mouldings taken out from phenol formaldehyde powder recently manufactured at Bhadravati were then examined, and they were found to be satisfactory. The Chairman pointed out that phenol powders might be first perfected before taking up other compositions, and that the sub-committee should actively and promptly pursue the matter and also keep in touch with the experiments conducted at Bhadravati.

The question of the manufacture of plastics with shellac base was also considered. The Director, Sandalwood Oil Factory, explained that the scheme was not one of economic importance to the State, as quantities of raw materials such as Lac, wood-flour, etc., were not available locally. It was resolved to drop the subject.

(7) Manufacture of Potassium Permanganate.

PERSONNEL.

(1) The Director of Geology (Member and Convenor).

(2) The Director of Sandalwood Oil Factory.

(3) The Government Director, Industrial Concerns.

(4) Dr. K. R. Krishnaswamy, B. A., D. Sc., F. I. C., Indian Institute of Science.

The report of Mr. L. S. Chandrakanta, Research Scholar of the Mysore Geological Department and the proceedings of the Committee were recorded. The Director, Sandalwood Oil Factory, stated that the Research Scholar had tackled the subject very well and the very approach of the subject was novel and instructive. The work of the Research Scholar was noted with satisfaction. The recommendation of the Committee to refer the scheme to the Government Bichromate Factory to take it up as an extension of work at a suitable opportunity was approved.

(8) Manufacture of Cement Asbestos.

PERSONNEL.

(1) Mr. B. Rama Rau, M.A., D.I.C., F.G.S., Director of Geology (Convenor).

(2) Mr. S. G. Sastry, B.A., M.Sc. (Lond.), Director of Sandalwood Oil Factory.

(3) Mr. M. K. Narasimhan, B.A., Cement Factory.

The Director of Sandalwood Oil Factory stated that he was taking action to dipsose of the existing stock of asbestos. The Chairman enquired if there was any scope for the manufacture of Boiler composition from asbestos and whether it would not thrive as small scale industry. The subject was discussed in detail. The question of adequate supplies of raw material—asbestos—came up and the Secretary invited the attention of the Board to the Administration Report of the Mysore Geological Department for the year 1938-39 where it was stated that in Idegondanahalli area, Hole-Narasipur taluk, 8,000 tons of asbestos had been located. It was considered desirable and necessary to utilise the raw material locally available to the best advantage.

The Chairman, Mysore Iron & Steel Works brought to the notice of the Board that the possibilities of manufacturing asbestos pipes might be examined, in view of the demand for military and other works.

It was finally resolved to request the sub-committee to examine the question of manufacture of Asbestos Boiler composition and also that of manufacture of asbestos cement pipes and favour the Board with its views.

(9) Manufacture of Abrasives.

PERSONNEL.

(1) The Director of Geology, (Member and Convenor).
(2) Dr. J. C. Ghosh, Director, Indian Institute of Science.
(3) Mr. P. S. Narayana, Cunsulting Industrial Geologist.
(4) The Government Director, Industrial Concerns.

Proceedings of the sub-committee and Government Orders No. D. 2908-11—I. & C. 230-40-8 dated 23rd December 1940 and No. D. 3468-69—I. & C. 230-40-16 dated 24th January 1941 sanctioning Rs. 2,000 and Rs. 500, respectively to Mr. P. S. Narayana, Consulting Industrial Geologist, on the recommendations of the Board, were read and recorded. The Director of Industries and Commerce pointed out that samples of abrasive articles prepared by Mr. Narayana were not satisfactory. The Chairman observed that the Director of Geology was in direct touch with Mr. Narayana and will report further on the progress of the investigations.

(10) Manufacture of Chemicals, Drugs and Essential Oils.

PERSONNEL.

(1) *Sastravaidyapravina* Dr. S. Subba Rao, B.A., M.B.C.M., L.R.C.P., D.P.H., (Chairman).
(2) Dr. B. T. Narayana, Agricultural Chemist.
(3) Mr. B. H. Krishna, Industrial and Testing Laboratory.
(4) Dr. B. L. Manjunath, Central College.
(5) Dr. P. C. Guha, Indian Institute of Science.
(6) Dr. L. S. Doraswami, Economic Botanist.
(7) Mr. M. S. Krishna Rao, Government Soap Factory.
(8) Dr. M. N. Ramaswamy, Forest Research Laboratory.
(9) Mr. B. Sanjeeva Rao, Indian Institute of Science.
(10) Mr. V. Venkatachar, Assistant Director of Industries and Commerce, (Secretary).

The report of the sub-committee was recorded. The Chairman remarked that the subject was a very important one and that necessary immediate action on the resolutions of the sub-committee might be taken and pursued.

The Director of Sandalwood Oil Factory said that Mr. Sundara Rao of Mysore—a gentleman with experience in the cultivation of essential oil plants—whom he consulted, was of opinion that the land of the Sandalwood Oil Factory at Mysore was not good for geranium cultivation. He also mentioned that Mr. B. V. Pandit of Nanjangud himself a large consumer of geranium oil, had imported cuttings from Yercaud and planted them at Nanjangud. At this stage the subject proposed by the Superintendent, Government Soap Factory, re: cultivation of patchouli and geranium in the factory (subject No. IV (E)) was also considered. The Chairman pointed out that the Forest and Agricultural Departments who are placed in a better position might be asked to take necessary

immediate action to grow the herbs and other essential oil bearing plants including patchouli and geranium as recommended by the sub-committee in their report placed for discussion, and the departments might also be requested to arrange if possible for the cultivation of these plants in an experimental plot at Balehonnur and Kemmangundi.

The Chairman also desired that Mr. S. G. Sastry, might be requested to publish a phamphlet *re*: Geranium containing full information with regard to its importance, etc., for being circulated and given publicity in the State.

The Chairman desired to know the progress with regard to Vitivert cultivation and called for a report.

(11) Production of Cinchona.

The report of the Chief Conservator of Forests and also that of Dr. M. N. Ramaswamy, Forest Research Chemist were placed before the House and recorded.

(12) Sulphur.

The report of the Director of Geology in Mysore was recorded.

(13) Manufacture of Urea.

PERSONNEL

(1) The Government Director of Industrial Concerns (Member and Convenor).
(2) The Director of Sandalwood Oil Factory.
(3) Dr. J. C. Ghosh, D.Sc. F.N.I. Director, Indian Institute of Science.
(4) Dr. V. Subrahmanyan, D.Sc., F.I.C., Indian Institute of Science, Bangalore.
(5) Dr. B. T. Narayanan, Agricultural Chemist.

The Chairman stated that a separate sub-committee was recently constituted to examine the possibilities of the manufacture of Urea.

The Director of Sandalwood Oil Factory explained the importance of Urea specially in plastics industry. He was of the opinion that a whole time chemist should be appointed to conduct experiments. It was pointed out that experiments had already been conducted at the Indian Institute of Science for conversion of compressed Ammonia into Urea and that Dr. Ghosh, Director of the Institute, would be glad to place the results before the committee subject to the conditions that might be laid down by the Government of India. The Chairman remarked that it was unnecessary to duplicate the work since the results of experiments at the Indian Institute of Science might be made available and the appointment of a wholetime chemist was therefore not necessary. He, however, suggested that anyone of the chemists either at Belagola or at Bhadravati might be given facilities for experiments.

MISCELLANEOUS.

Utilisation of Molasses for the recovery of potash salts.

The reply received from the Secretary, Mysore Sugar Company, Ltd., was read. The Chairman observed that the question might be actively pursued and the Sugar Company requested to expedite their views in the matter.

The following subjects on the agenda were deferred for consideration at the next meeting for want of time.

(1) Compilation of information re: Industrial Researches in the State.
(2) Scope and Functions of the Research Board.
(3) Consideration of subjects proposed by:
  (*a*) Government Director, Industrial Concerns—Manufacture of glass bulbs, silk worm gut, etc.
  (*b*) Director of Industries and Commerce,—Suggesting that certain items of researches taken up by the Government of India may also be taken up here.
  (*c*) General Manager, Government Electric Factory.—Utilisation of steel shavings.
  (*d*) Manager, Mysore Spun Silk Mills, Ltd, Channapatna—Manufacture of bobbins, shuttles, etc., etc.,
  (*e*) Dr. A. V. Varadarajaiengar, B.A., D.Sc., A.I.E. Indian Institute of Science—Manufacture, of starch from sweet potato.

The Chairman thanked the members for their useful suggestions and the meeting terminated.

K. PARTHASARATHI,
Secretary.

N. MADHAVA RAU,
Chairman.

WD 1803—GPB—100—21-4-41.

No. 570/401

4th April 1

B. Rama Rau, Esq., M.A., D.I.C., F.G.S.,
Director of Geology in Mysore, and
Convenor, Cement Asbestos Sub-Committee,
Bangalore.

Sub: Manufacture of Cement Asbestos pipes and
Asbestos Boiler Compositions.

In the Board meeting held on 15th March 1941, the question of manufacture of Asbestos Boiler Composition as a small scale industry was discussed. It was also considered desirable and necessary to utilise the raw material locally available - 8000 tons of asbestos since located by the Mysore Geolggical Department in Idegondanahalli area, Hole Narasipur taluk - to the best advantage. The Chairman, Mysore Iron & Steel Works brought to the notice of the Board that the possibilities of manufacturing asbestos pipes might be examined in view of the demand for Military and other works.

The Board resolved that the Sub-Committee might examine the question of manufacture of asbestos boiler composition and also that the manufacture of asbestos cement pipes and favour the Board with its views. I am desired to request you to be so good as to take necessary action in this behalf and intimate the views views of the Sub-Committee.

I have the honor to be,
Sir,
Your most obedient servant,

SECRETARY.

I. R. B. 6]

SUBJECT Manufacture of Cement asbestos pipes and Boiler Composition

No.

To The Dir of Geology & Conveyor of Cement Asbestos Sub Committee

Date of issue ..

Signed by ..

SIR,

In the Bd meeting held on 15/3/41, the question of manufacture of ~~Cement asbestos pipes~~ Boiler Composition ~~was~~ of a small scale industry was discussed. It was also considered desirable & necessary to utilise the raw material locally available - 8000 tons asbestos since located by the Geological Dept.

in Independent Hole area
The Navaho Tr —
to the best advantage.

It was resolved that
in view of the demand
for asbestos pipes.

The Chairman, M. Dew
brought to the notice of Bd
that the possibilities of manufacture
asbestos pipes might be examined
in view of the demand for military
& other works.

The Bd resolved that the Sub
Committee might examine the
question of manufacture of asbestos Cement
pipes & forward the Bd with its views. I am
desired to request you kindly to take necessary
action in this behalf & adopted by circulate the
views of the Sub Committee

List of enclosure.

Examined by

WD 01343—GPB—750—4-1-11

3/4/44 Sy.

(Board of Industrial Planning and Coordination.)

30th June 1

762/40-1

The Director of Geology in Mysore,
and Convenor, Cement Abbestos Sub-
Committee, Bangalore.

Sub: Manufacture of Cement Asbestos pipes
and Asbestos Boiler Composition.

I am directed to invite a kind reference to this office letter No.570/40-41 dated 4th April 1941 on the above subjects and to request you to be so good as to intimate if the Sub-Committee have since investigated the subjects and if so the views of the Sub-Committee may kindly be intimated.

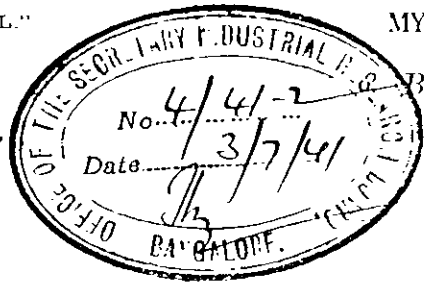
I have the honor to be,
Sir,
Your most obedient servant,

Secretary,
Industrial Research Board,
BANGALORE

GOVERNMENT OF MYSORE.

Telegraphic Address :—"GEOL."

In all communications please quote our reference
No. 9774-82



MYSORE GEOLOGICAL DEPARTMENT

Bangalore, 2nd July 1941.

FROM

B. RAMA RAO, ESQ., M.A., D.I.C., F.G.S.,

Director of Geology in Mysore,

Bangalore.

TO

The Secretary,
Industrial Research Board,
Bangalore.

SIR,

Subject: Manufacture of Cement Asbestos Pipes and Asbestos Boiler Composition.

With reference to your letter No.762/40-1 dated 30th June 1941, on the above subject, I have the honour to state that all the officers of the Department were engaged on field work and it was not possible to conduct any investigations on this, in this Department up till now. Two of the officers have just now returned to the Headquarters and one of them will take up this investigation immediately using the raw materials available in Mysore. If our experiments succeed, a meeting will be convened immediately thereafter to consider the possibilities of starting this Industry in the State.

I have the honour to be,
SIR,
Your most obedient servant,

B Rama Rao

DIRECTOR,
Mysore Geological Department.

Ack 3/7

1) Ack with thanks.
2) Put up a note for submission to Chairman.

Ar. 2/7 3/7/41 5/7

Cement Asbestos file

63/41-42

6th August 1.

Dear Mr. Rama Rao,

I am enclosing herewith for your perusal and information a set of literature received from The Indian Hume Pipe Co., Ltd., Kindly acknowledge receipt.

Yours sincerely,

B. Rama Rao, M.A.,D.I.C.(Lond),
F.G.S.,F.N.I.,
Director of Geology,
Bangalore.

Encls: One set of
Literature.

HSK.

Mr. B. RAMA RAO, M.A., D.I.C., F.G.S.,
Director of Geology.

MYSORE GEOLOGICAL DEPARTMENT,

D. O. No. G 400

Bangalore, 11th August. 1941

Dear Mr. Parthasarathy,

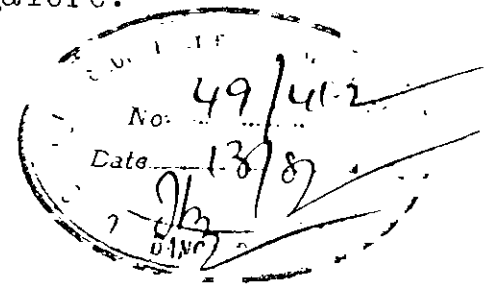
I acknowledge, with thanks, the receipt of a set of pamphlets relating to literature on the Hume Steel Pipes kindly forwarded with your D.O. letter No.63/41-42 dated 6/8th August 1941.

13/8

Yours sincerely,
B. Rama Rao

K. Parthasarathy, Esq., B.A.,
Secretary,
Industrial Research Board,
Bangalore.

CS.



GOVERNMENT OF MYSORE.

Telegraphic Address:—"GEOL."

In all communications please quote our reference
No. G. 539

MYSORE GEOLOGICAL DEPARTMENT

Bangalore, 27th August 1941.

FROM

B. RAMA RAO, ESQ., M.A., D.I.C., F.G.S.,
Director of Geology in Mysore,
Bangalore.

29/8

To

K. Parthasarathi, Esq., B.A.,
Secretary,
Industrial Research Board,
Bangalore.

Dear Sir,

Adverting to your letter No.570/40-1 dated 4th April 1941, intimating the resolution of the Industrial Research Board that the Geological Department may investigate the possibilities of manufacturing cement-asbestos pipes, I have the honour to state that the experiments so far conducted show that the Holenarsipur asbestos and Chamundi cement are suitable for the purpose. However, it would be desirable before we proceed any further in this investigation to depute an officer of this department to study the actual process of manufacturing such pipes and also the cement-asbestos sheets at Muland, near Bombay.

This and other questions will have to be discussed and I would be glad if you kindly let me know whether the Sub-Committee constituted for cement-asbestos sheets may function to consider these questions.

An early reply is requested.

I have the honour to be,
Sir,
Your most obedient servant,
B Rama Rao
DIRECTOR

Perused by chairman
Vide fourth meeting file

Ar 27/83 31/8/41

(Board of Industrial Planning and Coordination)

139

2nd September 1

B. Rama Rau, Esq., M.A., D.I.C., F.G.S.,
Director of Geology in Mysore,
Bangalore.

Subject: Manufacture of Cement Asbestos pipes and Sheets - Investigations.

With reference to your letter No.G.539 dated 27th August 41, on the subject, I am directed to state that since the Board plant is now working at Bhadravati, arrangements may kindly be made to send about a ton of Holenarasipur Asbestos from the Department to Bhadravati for being made into boards and tested. The Mysore Iron and Steel Works may kindly be requested to supply cement and the Mysore Paper Mills requested to kindly conduct the trials free of charge. Necessary further action may kindly be taken in this matter.

I am also desired to state that if necessary, the Officer working on the above investigations in your department, may be permitted to go to Bhadravati to discuss the above propositions.

I am to add further that the matter may be discussed in detail at the Board meeting on the 5th instant.

I have the honor to be,
Sir,
Your most obedient servant,

sd. K. Parthasarathi.

SECRETARY.

HSR\ No. 140-1/41-2

1) Copy of the above is forwarded in with compliments to the General Manager, Mysore Iron and Steel Works, Bhadravati and 2) the General Manager, Mysore Paper Mills, Bhadravati for favour of information and needful action in consultation with with the Director of Geology in Mysore, Bangalore, under kind intimation to this office.

SECRETARY.

GOVERNMENT OF MYSORE.

Telegraphic Address:—"GEOL."

In all communications please quote our reference
No. G.S.99/B-1

MYSORE GEOLOGICAL DEPARTMENT

Bangalore, 1st September 41.

FROM

B. RAMA RAO, ESQ., M.A., D.I.C., F.G.S.,
Director of Geology in Mysore,
Bangalore.

To

The Secretary,
Industrial Research Board,
Bangalore.

Sir,

With reference to your letter No. 117/41-2 dated 30th August 1941, I have the honour to forward herewith a note dealing with the investigations carried out in this Department, on the preparation of Asbestos-Cement sheets and pipes.

I have the honour to be,
Sir,
Your most obedient servant,

B Rama Rao

DIRECTOR,
Mysore Geological Department.

SECRETARY INDUSTRIAL RESEARCH BOARD
No. 78/41-2
Date 2/9/41
BANGALORE

Note submitted to Chairman
Separate Ar. 1/8
4/9
3.50 P.M.
Ack. with thanks
Acked 1/9

Notes on Experiments conducted on Asbestos-Cement Products in the Laboratory of the Mysore Geological Department.

Raw materials that are required in the preparation of asbestos-cement sheets are asbestos and portland cement. Asbestos of inferior grade, that is, mostly of non-spinning fibre variety of chrysotile and crocidolite are usually used for this purpose. Asbestos is finely ground and mixed with portland cement in a wet or dry state as the case may be, and pressed into thin sheets

In Mysore, there are no workable deposits of chrysotile asbestos of spinning fibre quality; but there are a few deposits of amphibole asbestos (tremolite and anthophyllite) whose fibres though white, are short and brittle. Asbestos of these types do not seem to have been so far used for manufacturing asbestos-cement sheets and pipes. This may be due to the fact that asbestos of good quality, like chrysotile and crocidolite, are readily available in the markets as imported from Canada and South Africa. It was considered desirable to test whether asbestos of the type found in Mysore could not as well be used for pipes and sheets.

Workable asbestos deposits are mainly situated in the Holenarsipur taluk of the Hassan District. Detailed prospecting operations in the Kabbur and Idegondanhalli areas, have shown that the deposits of asbestos are fairly extensive and would probably yield about 6 to 8 thousand tons of the mineral. Manufacture of Cement has already been taken up by the Mysore Iron and Steel Works and with both the raw materials readily available, the manufacture of asbestos-cement sheets, as a separate industry, is worth considering either by Government or by any other enterprising capitalist.

(P.T.O)

Details of preliminary experiments conducted in the Laboratory of the Mysore Geological Department : -

Asbestos of Idegondanhalli mine, was finely ground and mixed with requisite quantity of Chamundi Brand Portland - Cement in a dry state. Water was added to this mixture and after thoroughly mixing, a fairly uniform thick dough of the mixture was obtained. The slurry was then laid into thin sheets between the wooden boards (with cloth lining inside) and pressed in a small hand press suitably devised for the purpose. During the compression of the material, excess of water was removed. This press could only exert a pressure of about 40 to 50 lbs. per square inch. The sheet was kept under pressure for 24 to 36 hours and on releasing it from the press, it was allowed to dry in air for 6 to 8 hours. After this, the sheet was kept under water for curing, the duration of which was from 2 to 6 days.

In a small wooden mould, a few corrugated sheets were also prepared by the same method. Different proportions of the ingredients were tried, the percentage of asbestos in the mixture being 5, 7½, 10, 15, 16, 20 and 33. Best results were obtained when one part of asbestos was mixed with 5 parts of cement, i.e., 16% of asbestos.

During the experimental work, asbestos-cement sheets of sizes 2 feet by 2 feet and 2 feet by 3 feet, were easily prepared. The sheets prepared, showed plain and flat surfaces with uniform thickness, without any warping. The sheets kept under water for a long time showed better strength and toughness. The defect was the presence of a number of air holes all over the sheet. This was due to inadequate facilities to thoroughly mix and pug the ingredients with water.

Further experiments were continued in a 75-ton Pressure Press in the Government Electric Factory. The sheets prepared in this press show good crushing strength and some of them appear to be better than the imported material. Further investigations are proceeding to prepare sheets of standard thickness.

In preparing the sheets, different proportions of the ingredients were used, the amount of asbestos varying from 12 to 33 per cent. Best results were obtained with 16 — 20% asbestos.

Results of tests conducted in the College of Engineering on the sheets prepared are tabulated in the annexed statement.

Asbestos-Cement Pipes:- Preparation of asbestos-cement pipes was recently taken up and a few pipes have been prepared in a small mould. These pipes contain air holes and attempts are now being made to get pipes of uniform thickness with as few air holes as possible. On getting such pipes pressure tests on those will be conducted. ~~On getting~~ A few half-pipes have also been prepared. Unlike the cement-asbestos sheets, the pipes and half-pipes are prepared by cold moulding and are not subjected to any pressure. The percentage of asbestos used in these pipes varies from 20 to 25.

From enquiries, it is seen that the demand for asbestos-cement sheets and pipes in Mysore is about 2,500 tons a year.

Points for consideration : -

The desirability of ~~pursing~~ pursuing further, and deputing an officer to study the process of manufacture of cement-asbestos sheets and pipes either at Bombay or Nagpur.

B Ramadas

D I R E C T O R,
Mysore Geological Department.

Ar.1/9 9.9.41

Tests on asbestos-cement sheets conducted in the College of Engineering, Bangalore.

Sample.	Description	Width of specimen in inches.	Thickness in inches.	Total Load taken in lbs.	Intensity of stress in lbs- per square inch.
1.	Foreign selected from College.	2½	0.192	52	390.00
		2½	0.194	52	386.00
		2½	0.192	52	390.00
2.	Hand moulded and hand pressed. Asbestos 20% Cement 80%	2 7/16	0.293	36	128.44
		2	0.288	34	170.00
		2 9/16	0.294	34	161.00
3.	-do- Asbestos 16% Cement 84%	2½	0.336	45	192.86
		2½	0.327	37	163.24
		2 9/16	0.323	37	158.57
4.	Prepared in 75-ton Press Asbestos 25% Cement 75%	2 9/16	0.41	168	3510
		2½	0.467	140	2291
5.	-do- Asbestos 20% Cement 80%	2½	0.321	75	2596
		2½	0.321	93	3488

2-9-41

B Ramarao

D I R E C T O R,
Mysore Geological Department.

Ar.1/9

(Board of Industrial Planning and Coordination)

11th September 1

The Director of Geology in Mysore,
Bangalore.

Subject: Manufacture of Cement Asbestos Sheets and Pipes.

In continuation of this office letter No.139/41-2 dated 2nd September 1941, on the subject, I am directed to state that as per orders of the Chairman at the meeting of the Board held on 5th Septr., 1) Mr.T.P. Krishnachar, Sub-Asst.Geologist might be directed to proceed to Bhadravati with a ton of asbestos, 2) the Mysore Paper Mills, Ltd., may be requested to make the sheets in their Pasteboard Plant, 3) arrangements might also be made to get the boards tested, 4) and after ascertaining the results, Mr.Krishnachar and another Officer from Bhadravati might visit Mulund Factory.

I am to request you to be so good as to take necessary immediate action and forward proposals in the matter.

A copy of this letter is also sent to the Chairman, Mysore Paper Mills, Ltd., Bangalore for favour of issuing needful instructions to the concerned in the matter.

I have the honor to be,
Sir,
Your most obedient servant,

sd/-

Secretary.

No.2[illegible]/41-2

Copy of the above is forwarded with compliments to the Chairman, Mysore Paper Mills, Ltd., Bangalore for favour of information and needful action.

Secretary.

WD 6737—GBPM—80,000—9-5-41.

194

From

The Director of Geology
in Mysore,
Bangalore.

To

K. Parthasarathi, Esq., B.A.,
Secretary, Industrial
Research Board,
Bangalore.

Dated 13th Sept. 1941.

Despatched

Received

General No. 18-15

No.

Enclosure No.

S. N. Subst.
16.9

Sir,

With reference to your letter No.199/41-2 dated 11th September 1941, regarding the manufacture of asbestos-cement sheets and pipes, I have the honour to state that arrangements have already been made for the despatch of one ton of asbestos from Holenarsipur area to the Mysore Paper Mills, Ltd., Bhadravati. On hearing from the General Manager of the Paper Mills, of the receipt of the material, Mr. T.P. Krishnachar will be directed to go to Bhadravati to carry on the experiments in the Pasteboard Plant.

OFFICE OF THE SECRETARY INDUSTRIAL RESEARCH BOARD BANGALORE. No. 113/41-2 Date 15-9-41

I have the honour to be,
Sir,
Your most obedient servant,

P Ramarao

DIRECTOR,
Mysore Geological Department.

Ar.13/9

THE MYSORE PAPER MILLS, LIMITED

TEL. ADD. "PAPERMILL"
HEAD OFFICE: BANGALORE

TRADE MARK
BISON BRAND

BHADRAVATI
(MYSORE STATE RY.)

REF. No P.6252

DATED 16th ~~Augt~~ Septr '41

The Secretary,
Board of Industrial Planning and Coordination,
(Industrial Research Board)
Government of Mysore,
Bangalore.

Dear Sir,

Subject:- Manufacture of Cement Asbestos Pipes and Sheets - Investigations.

With reference to your letter No.199/412 of the 11th instant to the Director of Geology, Bangalore, copy of which has been forwarded to us by the Chairman, we write to state that the experiments in this connection may kindly be arranged to be conducted during next month on dates to be intimated by us, as it would be extremely inconvenient for us to release our cardboard plant for this purpose during this month on account of the plant being required to manufacture boards for the Government of India in the Supply Department.

Kindly let us hear that you are agreeable.

Yours faithfully,
For THE MYSORE PAPER MILLS LTD:

K. Venkatalakshmamma

General Manager.

OFFICE OF THE SECRETARY INDUSTRIAL R. & C. BANGALORE. No. 121/41-2 Date 17/9/41

addressed Dr of Geology & arrange with the Chairman Mysore Paper Mills

17/9

Copy to Bangalore Office.

(Board of Industrial Planning and Coordination)

19th Septr. 1

The Director of Geology in Mysore,
Bangalore.

Subject: Manufacture of Cement Asbestos Sheets and Pipes.

In forwarding herewith a copy of letter received from the General Manager, Mysore Paper Mills, Ltd., requesting that experiments on the above subject may be arranged to be conducted during next month etc., I am directed to request you kindly to arrange with the Chairman, Mysore Paper Mills, Ltd., to have the experiments conducted at Bhadravati, as early as -- practicable, in view of the circumstances explained in the letter of the General Manager, Mysore Paper Mills.

I have the honor to be,
Sir,
Your most obedient servant,

Secretary.

No. dated, 19th Septr. 1941.

Copy of the foregoing is forwarded with compliments to the General Manager, Mysore Paper Mills, Ltd., Bhadravati for information, with reference to his letter No.P.6252 dated 16.9.41.

Secretary.

(Board of Industrial Planning and Coordination)

457

28th October 1

Dear Mr.Rama Rau,

Sub: Investigations on the manufacture of Cement Asbestos sheets and pipes.

Refce: This office letter No.265/41-2 dated 19th Septr.1941.

I shall be obliged if you can kindly let me know how the matter now stands and whether Mr.T.P. Krishnachar has conducted the experiments at Bhadravati.

I am desired to request you to be so good as to arrange to forward in future fortnightly progress reports for being placed at every meeting of the Board.

Yours sincerely,

sd/-

B. Rama Rau,Esq.,M.A.,D.I.C.,F.C.S.,
Director of Geology in Mysore, Bangalore.

No.459/41-2 dated 28.10.41.

HSR) Copy with compliments to the General Manager, Mysore Paper Mills,Ltd., Bhadravati, in continuation of this office letter No.266 dated 19th Septr.with a request to kindly intimate the present position.

Secretary.

(Board of Industrial Planning and Coordination)

31st October 1

485/41.2

Dear Mr.Rama Rau,

I am just in receipt of your two D.O. letters No.G.1232 and 18-19 dated 30th October 1941, together with enclosures.

Many thanks.

Yours sincerely,

B. Rama Rau, Esq.,M.A.,D.I.C.,F.G.S.,
Director of Geology in Mysore,
Bangalore.

HSR)

Mr. B. RAMA RAO, M.A., D.I.C., F.G.S.,
Director of Geology.

MYSORE GEOLOGICAL DEPARTMENT,

D. O. No. 18-19
Cenl: Oac.

Bangalore, 30th October 1941.

Dear Mr. Parthasarathi,

In reply to your D.O. letter No.457 dated 28th October 1941, I have herewith enclosed a copy of the note submitted to me by Mr. T.P. Krishnachar, on the work carried out by him at Bhadravati, for your information.

Yours sincerely,
B Rama Rao

31/X

No. 188/41-2
Date 31.10.41
BANGALORE

Ackgd

31.10.41 To

K. Parthasarathi, Esq., B.A.,
Secretary,
Board of Industrial Planning
and Co-ordination,
Bangalore.

For orders if this review is to be placed before the Bd on 3.11.41
Subth
31.X.41
with enclosures
In Class
31.10.41

Subject: Investigations on the manufacture of Cement Asbestos Sheets and Pipes.

Four trial experiments were conducted in the card board plant at the Mysore Paper Mills, Ltd., Bhadravati, between the 13th and 17th October 1941. In the first experiment the percentage of asbestos used was 33% and the rest was cement. The total quantity fed into the beaters and the sludge tank was 800 lbs. As the asbestos was finely powdered in the beaters it was not possible to get any sheets on the rollers even though the slurry was picked up by the felt and regular layers were formed on the rollers.

To overcome this trouble a small quantity of rag pulp (5%, 3% and 2% for the next three experiments) was added to the mixture and this gave better results and the sheets could be taken off the rollers. Percentages of Asbestos used in these experiments were 25, 20 and 15 respectively. In the third experiment a small quantity of sodium silicate was added (1%) to the mixture.

The sheets prepared in the last three experiments were subjected to pressure in the hydraulic press and then kept under water in the curing tank. These sheets have to be removed at the end of the 2nd, 3rd, 4th and 5th weeks and tested for their crushing and tensile strengths.

From the experiments it was evident that a small proportion of flexible fibrous material should be mixed with asbestos and cement, and in place of the rag pulp that was used in the experiment, a small percentage of chrysotile asbestos could be added. Further experiments have to be carried out with a mixture of Hole-narsipur asbestos, cement and a small quantity of chrysotile asbestos. This last mineral is available in Cuddappah and the mining companies working for asbestos in

the Cuddappah District have been addressed to quote their prices.

I shall go to Bhadravati, early next month to take out the sheets at the end of 3rd week and to arrange to carry out further experiments. In the meanwhile, the sheets taken out of the curing tank will be sent to the Engineering College for testing and the results communicated to you.

The preparation of pipes was deferred as this has to be only after the experiments in the sheet preparations are standardised.

(Sd) T. P. Krishnachar,
Sub-Assistant Geologist.

' C O P Y '

B Ramadevy

D I R E C T O R ,
Mysore Geological Department.

Ar.30/x.

(Board of Industrial Planning and Coordination)

19th November 1

20

5987

The Director of Geology in Mysore,
Bangalore.

Subject: Manufacture of Cement Asbestos sheets and pipes.

I am directed note below an extract from the proceedings of the Board meeting held on the 3rd November 1941 for your information and necessary further action.

> " The Director of Geology explained the experimentsnow conducted and said that further experiments were in progress. The Chairman suggested that in case the experiments proved successful, the industry might be started at Holenarasipur. It was resolved that further report on the progress of the experiments might be awaited."

Further progress may kindly be reported for the infomation of the Board.

p.t.o.

Board.

I have the honor to be,
Sir,
Your most obedient servant

Secretary.

WD 6737—GBPM—80,000—9-5-41

194 .

From

The Offg. Director,
Mysore Geological Dept.,
Bangalore.

To

The Secretary,
Industrial Research Board,
Bangalore.

Dated 26th November 1941.

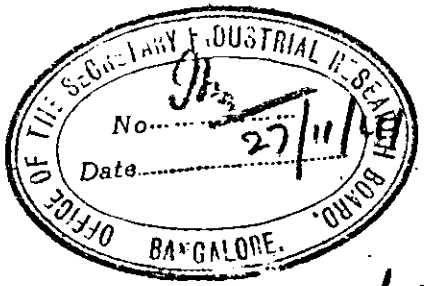
Despatched

Received

General No. 18-27

No.

Enclosure No.



At the meeting
for info.

Dear Sir,

Subject: Manufacture of Cement Asbestos Sheets and Pipes.

With reference to your letter No.598/41-42 dated 19th November 1941 on the above subject, I have to state in reply that the three sets of samples taken out of the curing tank of the Paper Mills (Bhadravati) at the end of 2nd, 3rd and 4th weeks respectively have been sent to the Engineering College for testing and the results are awaited. Two more sets have to be taken out of the curing tank at the end of 5th and 6th weeks. These will also be sent for testing.

(P.T.O)

After ascertaining the results of testing, a concise report will be sent in due course of time.

Yours faithfully,

V. V. Venugopal

Offg. Director,
Mysore Geological Department.

Ar.26/11.

Mr. T.Venugopal,B.A.,
Offg. Director of Geology.

MYSORE GEOLOGICAL DEPARTMENT,

D. O. No. G. 1670 — Bangalore, 11th December 1941.
Encl. 2 Report.

Dear Sir,

I am enclosing herein, ~~in duplicate~~ in duplicate, the progress report on the manufacture of cement asbestos sheets. One copy may kindly be submitted to the Chairman of the Board for his information.

Yours sincerely,

T. Venugopal

SECRETARY
BOARD OF INDUSTRIAL
PLANNING & COORDINATION
DEC 12 1941
No. 3407/41-2

Rec'd after receipt

To

The Secretary,
Industrial Research Board,
Bangalore.

Placed before the Board

Submitted.

Four experiments were conducted in the Card board Plant of the Mysore Paper Mills, Limited, with the kind co-operation of the Officers of the Paper Mills, in the month of October 1941 and the sheets prepared were pressed and kept in the Curing Tank. These sheets were taken out at the end of 2nd., 3rd., 4th., 5th., and 6th. weeks to carry on the comparative tests in their strength. Details of experiments are given below :-

Experiment I

Percentage of Asbestos	33
Cement	67

The Asbestos was finely ground in the beaters and so it was not possible to take out sheets off the rollers. The experiment was not successful.

Experiment II

Just to facilitate removal of sheets wound round the rollers, a small percentage of rag pulp was added to the mixture of Cement and Asbestos. The following ingredients were used :-

Cement	70 %
Asbestos	25 %
Rag pulp	5 %

// Sheets could be taken off the rollers.

Experiment III

Materials used :-

Cement	76 %
Asbestos	20 %
Rag Pulp	3 %
Sodium Silicate	1 %

Experiment IV

Materials used :-

Cement	83 %

P.T.O.

Cement	83 %
Asbestos	15 %
Rag pulp	2 %

Experiments II, III and IV were successful in so far as getting the sheets on the rollers were concerned and the removal of sheets presented some difficulties. However, large sized sheets 3' x 3' could be taken out. There were some practical difficulties in getting sheets of uniform thickness.

Sheets taken off the rollers were pressed in a hydraulic press but this press was not in perfect working condition. The required high pressure could not be attained from this press. In the absence of any other mode of pressing device, the sheets were kept under the press for 6 to 7 hours and then they were kept under water in a Curing Tank.

Sheets taken out of the Curing Tank at the end of 2nd., 3rd. and 4th weeks were sent for testing to the work shop of the Engineering College. The results of testing show low values for load taken and bending stress. The hand made one showed better strength probably due to the high pressures applied. One of the reasons for the weak state of the sheets may be the lack of high pressures on the sheets. Two more sets of sheets i.e. after 5th. and 6th. week curing have been received and these will also be sent and the tests reported. It is better if the same experiments are repeated when there are proper facilities for pressing the sheets in a suitable high pressure press. The present testing value of our sheets vary between one-third and half the testing values of the imported sheets.

Offg. Director,
Mysore Geological Department.

COLLEGE ENGINEERING, BANGALORE.

Sample labled No.	Number of tests for each sample.	Maximum load taken in lbs.	Width in inches.	Average width in inches.	Thickness or depth in inches.	Average thickness or depth in inches.	Bending stress in lbs. per sq. inch.	Average bending stress of each sample in lbs. per sq. inch.	Remarks.
1.	1.	52	2.5 2.5 2.5	2.50	0.280 0.295 0.285	0.287	2275		Local.
	2.	56	2.56 2.56 2.56	2.56	0.250 0.260 0.260	0.257	2982	2871	
	3.	67	2.56 2.56 2.56	2.56	0.256 0.275 0.265	0.265	3355		
2.	1.	28	2.56 2.56 2.56	2.56	0.202 0.204 0.209	0.205	2342		Local.
	2.	28	2.56 2.56 2.56	2.56	0.207 0.207 0.204	0.206	2319	2356	
	3.	28	2.56 2.56 2.50	2.54	0.204. 0.206 0.200	0.203	2407		
3.	1.	24	2.56		0.170				Local.

			2.56		0.172	0.170	2920	
	2.	24	2.56 2.56 2.56	2.56	0.172 0.168 0.175	0.172	2853	2966
	3.	24	2.56 2.56 2.50	2.54	0.168 0.168 0.160	0.165	3124	
4.	1.	41	2.56 2.56 2.56	2.56	0.219 0.229 0.212	0.220	2979	Local.
	2.	36	2.63 2.63 2.56	2.61	0.205 0.196 0.199	0.200	3103	2832
	3.	21	2.50 2.50 2.50	2.50	0.187 0.163 0.181	0.177	2415	
5.	1.	28	2.50 2.50 2.50	2.50	0.188 0.192 0.192	0.191	2764	Local.
	2.	25	2.63 2.56 2.56	2.58	0.190 0.190 0.173	0.184	2576	2432
	3.	19	2.50 2.50 2.50	2.50	0.187 0.193 0.182	0.187	1956	

6.	1.	21	2.63 2.63 2.56	2.61	0.184 0.184 0.187	0.185	2115	Local.
	2.	24	2.56 2.56 2.63	2.58	0.191 0.188 0.192	0.190	2319	2087
	3.	19	2.50 2.56 2.56	2.54	0.195 0.182 0.198	0.192	1827	
7.	1.	39	2.56 2.56 2.56	2.54	0.308 0.300 0.303	0.304	1495	Local.
	2.	39	2.56 2.56 2.63	2.58	0.322 0.318 0.312	0.317	1354	1474
	3.	45	2.56 2.56 2.56	2.56	0.323 0.308 0.319	0.317	1574	
8.	1.	49	2.56 2.56 2.56	2.56	0.264 0.310 0.327	0.300	1914	Local.
	2.	46	2.56 2.56 2.56	2.56	0.277 0.312 0.335	0.308	1704	1666
	3.	37	2.56 2.56 2.56	2.56	0.265 0.303 0.353	0.307	1380	
9.	1.	34	2.50 2.50 2.50	2.50	0.274 0.258 0.278	0.270	1185	Local.
	2	32	2.56		0.253			

			2.56	2.56	0.253	0.258	1690	1584
			2.56		0.268			
	3.	35	2.56		0.259			
			2.56	2.56	0.251	0.256	1878	
			2.56		0.259			
10.	1.	28	2.5		0.254			Local.
			2.5	2.50	0.262	0.257	1526	
			2.5		0.254			
	2.	35	2.63		0.269			
			2.63	2.63	0.269	0.271	1630	1686
			2.63		0.275			
	3.	39	2.63		0.264			
			2.63	2.63	0.270	0.265	1901	
			2.63		0.260			
11.	1.	136	2.5		0.288			Foreign Make.
			2.5	2.50	0.288	0.286	5985	
			2.5		0.281			
	2.	157	2.56		0.284			
			2.56	2.56	0.287	0.286	6747	6261
			2.56		0.287			
	3.	128	2.50		0.275			
			2.50	2.50	0.275	0.276	6050	
			2.50		0.275			

COLLEGE ENGINEERING, BANGAL

Sample labled No.	Number of tests for each sample.	Maximum load taken in lbs.	Width in inches.	Average width in inches.	Thickness or depth in inches.	Average thickness or depth in inches.	Bending stress in lbs. per sq. inch.	Average bending stress of each sample in lbs. per sq. inch.	Remarks.
1.	1.	52	2.5 2.5 2.5	2.50	0.280 0.295 0.285	0.287	2275		Local.
	2.	56	2.56 2.56 2.56	2.56	0.250 0.260 0.260	0.257	2982	2871	
	3.	67	2.56 2.56 2.56	2.56	0.256 0.275 0.255	0.265	3355		
2.	1.	28	2.56 2.56 2.56	2.56	0.202 0.204 0.209	0.205	2342		Local.
	2.	28	2.56 2.56 2.56	2.56	0.207 0.207 0.204	0.206	2319	2356	
	3.	28	2.56 2.56 2.50	2.54	0.204. 0.206 0.200	0.203	2407		
3.	1	24	2.56		0.179				Local.

			2.56		0.168 0.172	0.170	2920		
	2.	24	2.56 2.56 2.56	2.56	0.172 0.168 0.175	0.172	2853	2966	
	3.	24	2.56 2.50 2.50	2.54	0.168 0.160 0.160	0.165	3124		
4.	1.	41	2.56 2.56 2.56	2.56	0.219 0.229 0.212	0.220	2979		Local.
	2.	36	2.63 2.63 2,56	2.61	0.205 0.196 0.199	0.200	3103	2832	
	3.	21	2.50 2.50 2.50	2.50	0.167 0.163 0.181	0.177	2415		
5.	1.	23	2.50 2.50 2.50	2.50	0.189 0.192 0.192	0.191	2764		Local.
	2.	25	2.63 2.56 2.56	2.58	0.190 0.190 0.173	0.184	2576	2432	
	3.	19	2.50 2.50 2.50	2.50	0.187 0.193 0.182	0.187	1956		

								1584	
	3.	35	2.56 2.56 2.56	2.56	0.259 0.251 0.259	0.256	1878		
10.	1.	28	2.5 2.5 2.5	2.50	0.254 0.262 0.254	0.257	1526		Local.
	2.	35	2.63 2.63 2.63	2.63	0.269 0.269 0.275	0.271	1630	1686	
	3.	39	2.63 2.63 2.63	2.63	0.264 0.270 0.260	0.265	1901		
11.	1.	136	2.5 2.5 2.5	2.50	0.288 0.288 0.281	0.286	5985		Foreign Make.
	2.	157	2.56 2.56 2.56	2.56	0.284 0.287 0.287	0.286	6747	6261	
	3.	128	2.50 2.50 2.50	2.50	0.275 0.275 0.273	0.276	6050		

			2.56	2.56	0.253	0.258	1690	1584
			2.56		0.268			
	3.	35	2.56		0.259			
			2.56	2.56	0.251	0.256	1878	
			2.56		0.259			
10.	1.	28	2.5		0.254			
			2.5	2.50	0.262	0.257	1526	Local.
			2.5		0.254			
	2.	35	2.63		0.269			
			2.63	2.63	0.269	0.271	1630	1686
			2.63		0.275			
	3.	39	2.63		0.264			
			2.63	2.63	0.270	0.265	1901	
			2.63		0.260			
11.	1.	136	2.5		0.288			
			2.5	2.50	0.288	0.286	5985	Foreign Make.
			2.5		0.281			
	2.	157	2.56		0.284			
			2.56	2.56	0.287	0.286	6747	6261
			2.56		0.287			
	3.	128	2.50		0.275			
			2.50	2.50	0.275	0.276	6050	
			2.50		0.273			

6.	1.	21	2.63 2.63 2.56	2.61	0.184 0.184 0.187	0.185	2115		Local.
	2.	24	2.56 2.56 2.63	2.58	0.191 0.188 0.192	0.190	2319	2087	
	3.	19	2.50 2.56 2.56	2.54	0.195 0.182 0.198	0.192	1827		
7.	1.	39	2.56 2.56 2.56	2.54	0.308 0.300 0.303	0.304	1495		Local.
	2.	39	2.56 2.56 2.63	2.58	0.322 0.318 0.312	0.317	1354	1474	
	3.	45	2.56 2.56 2.56	2.56	0.323 0.308 0.319	0.317	1574		
8.	1.	49	2.56 2.56 2.56	2.56	0.264 0.310 0.327	0.300	1914		Local.
	2.	46	2.56 2.56 2.56	2.56	0.277 0.312 0.335	0.308	1704	1666	
	3.	37	2.56 2.56 2.56	2.56	0.265 0.303 0.353	0.307	1380		
9.	1.	34	2.50 2.50 2.50	2.50	0.274 0.258 0.278	0.270	1185		Local.
	2.	32	2.56		0.253				

Experiment 2.

Sample I. Taken out at the end of two weeks.

Sample II. Taken out at the end of three weeks.

Sample III. Taken out at the end of four weeks.

Experiment 3.

Sample IV. Taken out at the end of two weeks.

Sample V. Taken out at the end of three weeks

Sample VI. Taken out at the end of four weeks.

Experiment 4

Sample VII. Taken out at the end of two weeks.
Sample VIII. Taken out at the end of three weeks.
Sample IX & X. Taken out at the end of four weeks.
Foriegn Sample XI. Imported material for testing.

Submitted.

Four experiments were conducted in the Card board Plant of the Mysore Paper Mills, Limited, with the kind co-operation of the Officers of the Paper Mills, in the month of October 1941 and the sheets prepared were pressed and kept in the Curing Tank. These sheets were taken out at the end of 2nd., 3rd., 4th., 5th., and 6th. weeks to carry on the Comparative tests in their strength. Details of experiments are given below :-

Experiment I

Percentage of Asbestos	33
" " Cement	67

The Asbestos was finely ground in the beaters and so it was not possible to take out sheets off the rollers. The experiment was not successful.

Experiment II

Just to facilitate removal of sheets wound round the rollers, a small percentage of rag pulp was added to the mixture of Cement and Asbestos. The following ingredients were used :-

Cement	70 %
Asbestos	25 %
Rag pulp	5 %

Sheets could be taken off the rollers.

Experiment III

Materials used :-

Cement	76 %
Asbestos	20 %
Rag Pulp	3 %
Sodium Silicate	1 %

Experiment IV

Materials used :-

Cement	83 %

P.T.O.

Cement	83 %
Asbestos	15 %
Rag pulp	2 %

Experiments II, III and IV were successful in so far as getting the sheets on the rollers were concerned and the removal of sheets presented some difficulties. However, large sized sheets 3' x 3' could be taken out. There were some practical difficulties in getting sheets of uniform thickness.

Sheets taken off the rollers were pressed in a hydraulic press but this press was not in perfect working condition. The required high pressure could not be attained from this press. In the absence of any other mode of pressing device, the sheets were kept under the press for 6 to 7 hours and then they were kept under water in a Curing Tank.

Sheets taken out of the Curing Tank at the end of 2nd., 3rd. and 4th weeks were sent for testing to the work shop of the Engineering College. The results of testing show low values for load taken and bending stress. The hand made one showed better strength probably due to the high pressures applied. One of the reasons for the weak state of the sheets may be the lack of high pressures on the sheets. Two more sets of sheets i.e. after 5th. and 6th. week curing have been received and these will also be sent and the tests reported. It is better if the same experiments are repeated when there are proper facilities for pressing the sheet in a suitable high pressure press. xxx xxxx

Experiment 2.

Sample I. Taken out at the end of two weeks.

Sample II. Taken out at the end of three weeks.

Sample III. Taken out at the end of four weeks.

Experiment 3.

Sample IV. Taken out at the end of two weeks.

Sample V. Taken out at the end of three weeks

Sample VI. Taken out at the end of four weeks.

Experiment 4

Sample VII. Taken out at the end of two weeks.
Sample VIII. Taken out at the end of three weeks.
Sample IX & X. Taken out at the end of four weeks.
Foriegn Sample XI. Imported material for testing.

No. 1855/41

INDIAN CENTRAL JUTE COMMITTEE.

TECHNOLOGICAL RESEARCH LABORATORIES.

Regent Park,

Tollygunge, Calcutta

25th November, 1941.

From

C.R.Nodder, Esq., M.A.(Cantab),
Director.

To

K. Parthasarathi, Esq., B.A.,
Secretary, Industrial Research Board,
Government of Mysore,
Bangalore.

Dear Sir,

With reference to your letter No.542 dated the 10th November, 1941 the only information we have here is that some paper mills utilise old gunnies for making brown paper and badami paper (in conjunction with other fibre such as bamboo, or sabi grass). I am forwarding a copy of your letter to the Secretary with a request that the Economic Research section of the Committee may give any information they may have.

Yours faithfully,

OFFICE OF THE SECRETARY INDUSTRIAL RESEARCH BOARD BANGALORE. No. 300/41-2 Date 29/11/41

Send a Copy to Dr. J. K. Iyengar for Geo.

C.R.Nodder

DIRECTOR.

No. 309/41 E.R.S.

INDIAN CENTRAL JUTE COMMITTEE.

Telegram :—JUTECOM.
Telephone :—Cal. ~~XXXX~~ 4306

4, HASTINGS STREET,
CALCUTTA.

FROM

D. L. Mazumdar Esq., I.C.S.,
Secretary.

To

The Secretary,
Industrial Research Board,
Bangalore.

Dated Calcutta, the 2nd December, 1941.

Dear Sir,

In continuation of the letter of the Director of the Technological Research Laboratories, Indian Central Jute Committee, No.1855/41 dated 25.10.41, further information on the utilisation of jute fibres from old bags as supplied by our Economic Research Section is forwarded herewith.

SECRETARY.
BOARD OF INDUSTRIAL
PLANNING & COORDINATION.
DEC 8 1941
No. 319/41.2

Yours faithfully,

D. L. Mazumdar
Secretary.

1) Ackld with thanks.
2) Copies will be sent to the Dr & Dte of Dis &
geo. for Bgs. & Hyderabad also.

8/12 8/12

UTILISATION OF JUTE FIBRES FROM OLD BAGS

(1) Paper making industry :-

Mr. N. Chawdhuri in his 'Jute and Substitutes' (p.204) mentions about the use of old ropes, gunnies, gunny cloths, nets etc. in the hand made paper industry of Bengal.

Old gunnies are also used in the paper mills.

(2) Manufacture of re-woven products :-

In U.S.A. the re-woven products are made from a mixture of jute fibre obtained from old jute bagging and sufficient new jute fibre to give the required strength to the resulting fabric. This manufacture is generally used as cotton bale covering. (American Cotton-tare Practices & Problems. p.7).

(3) According to Dundee Chamber of Commerce jute wastes are used for the following purposes :-

(a) Oakum, (b) Engine cleaning waste, (c) Roofing felts and under felts, (d) Cattle bedding.

Fibre from used bags and cloths may probably be used for the above and similar purposes.

(4) Fibres from old gunnies may probably be used for filling mattresses and cushions. Mattresses are often filled with coir which make them rather hard. If fibres from old gunnies are used instead they are likely to be softer.

Copy of letter No.1855/41 dated 25th November 1941 from the Indian Central Jute Committee, Technological Research Laboratories, Bentinck Park, Tollygunge, Calcutta to the Secretary to the Board of Industrial Planning & Coordination, Bangalore.

With reference to your letter No.542 dated the 10th November 1941 the only information we have here is that some paper mills utilise old gunnies for making brown paper and badami paper (in conjunction with other fibre such as bamboo, or sabi grass). I am forwarding a copy of your letter to the Secretary with a request that the Economic Research Section of the Committee may give any information they may have.

Further letter No.309/41.E.R.L. from the Secretary, Indian Central Jute Committee, 4, Hastings Street, Calcutta to the Secretary of the Board of Industrial Planning and Coordination, Bangalore.

In continuation of the letter of the Director of the Technological Research Laboratories, Indian Central Jute Committee, No.1855/41 dated 25.11.1941 further information on the utilisation of jute fibres from old gunn bags as supplied by our Economic Research section is forwarded herewith.

Enclosure:

Utilisation of Jute fibres from old Bags.

---

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====

No. 793-I/41-2 Office of the Secretary,
Board of Industrial Planning and Coordination.
Bangalore, Dated, 22nd December 1941.

24

Copy of the above is forwarded with compliments to

1) the Director of Industries and Commerce in Mysore, Bangalore for information. This has reference to the talk of the Director with the Secretary at the Board meeting some time back.

2) the Director of Geology in Mysore, Bangalore for information.

Secretary.

802/41-2

26th December 1

The Director of Industries & Commerce,
Bangalore.

Manufacture of cement asbestos sheets and pipes.

12th December 1941

"The proceedings of the Director of Industries was read for the information of the Members. It was noted that there were some practical difficulties in getting steeper of uniform quality. The Director Sandalwood Oil Factory stated that the steam obtained by the Department to generate steam at the Sandal Oil Factory was not available. He also stated that the Department of Engineering at the Sandal Oil Factory had prepared plan and estimate for putting sheets and tiles which were quite recent. It was ordered that the Director of Industries might direct the Engineer to visit the Sandalwood Oil Factory and study the matter done there and furnish further note in that regard."

A copy of this letter is enclosed for information has been forwarded to the Director of Industries & Commerce & Oil Factory Bangalore for information.

No.803/41-2 dated 26th Decr.1941.

Copy of above is forwarded with compliments to the Director, Sandalwood Oil Factory Bangalore for favour of information with a request to provide necessary facilities to Mr. Krishnachar when he visits the Factory.

sd/-

Secretary.

No 1155

xxxxxxxxxxxxxxx xxxxxxxxx
Old Public Offices,
24th February 2

Mr.George Matthan,B.Sc.,
xxxxxxxxxxxxxxx

Dear Sir,

Subject: Manufacture of cement asbestos sheets and pipes.

In inviting a kind reference to this office letter No.502/41-2 dated 26th December 1941 communicating the decision of the Board on the above subject. I am directed to request you to kindly forward a detailed report (in duplicate) on the progress of the investigations and the action taken on the resolutions of the Board.

This subject is on the agenda of the next meeting.

Yours sincerely,

B. Rama Rao, Esq., M.A.,D.I.C.,F.G.S.
Director of Geology in Mysore,
Bangalore.

HSR)

Mr. B. RAMA RAO, M.A., D.I.C., F.G.S.,
Director of Geology.

Mysore Geological Department.

Bangalore, 26th Feb. 1942.

D.O. No. 18-56.

Dear Sir,

With reference to your letter, D.O. No.1155/41-Z dated 24th February 1942 requesting me to send two copies of a detailed note on further progress on investigations relating to the preparation of cement asbestos sheets and pipes, I desire to say that the tests conducted by the Principal of the Engineering College on six batches of sheets prepared in the Paper Mills at Bhadravati by Mr. T.P. Krishnachar, Sub-Assistant Geologist, who is carrying on this work, show that the sheets are inferior in tensile strength to the imported articles in the market. When he was on leave during December and January, Mr. T.P. Krishnachar had been requested to try and get an entry and study if possible the actual machinery employed and the methods of preparation of the cement-asbestos sheets at Muland. He was able to get admission into the Factory only once and from what he could see and study within that short time, he says that the method he had adopted at the Paper Mills for preparing the sheets was almost similar to the practice in the Muland Factory, and he is of opinion that with a mixture of about 3 to 5 per cent of asbestos of good elastic fibres, the asbestos of the Holenarsipur deposits would be found suitable for making the sheets and pipes. Within a few days after his return from leave he had to leave for camp to take up the kaolin (China clay) investigations at Bageshpur. Consequently, he has been unable to submit a detailed note on the results of his trial at Bhadravati and his study of the process at Muland.

Pursuant to the Resolutions of the Board, Mr. T.P. Krishnachar was directed, as soon as he returned from leave, to study the

P.T.O

methods adopted in the Sandalwood Oil Factory. Before leaving for camp Mr. Krishnachar had interviewed the Director, Sandalwood Oil Factory, in this connection and was told that it would be better if he goes to the Factory along with the latter officer so that he may study all the notes prepared on the results of the investigations conducted there. Mr. Krishnachar has been asked to correspond direct with the Director of the Sandalwood Oil Factory and to make a comparative study as early as possible of the methods which had been adopted there for the preparation of the cement asbestos sheets. I would be glad if this subject be postponed for the next meeting instead of being taken up in the present one, so that I may have some time to get Mr. Krishnachar's detailed notes to prepare the progress report which the Board has called for.

BOARD OF INDUSTRIAL
PLANNING & CO-ORDINATION.
FEB 27 1942
No. 1111/42-2

Yours sincerely,
B. Ramarao

D.O.No.BP.1173/27.2.42

George Matthan, Esq., B.A.,
Secretary,
Board of Industrial Planning
& Co-ordination,
Bangalore.

FEB 27 1942
8595

Subject
As approved, the subject has been included in the agenda of the meeting on 6/3.
Orders are solicited regarding 'A' Agenda & notice of meeting has already been issued.
For favour of perusal & orders
27/2

27/2/42

The Subject will be deleted from the agenda for the meeting on 6/3 & the same included for the next meeting. Revised agenda will be sent to Chairman
28/2/42

Dft & Eno initiated
Letter issued 2/3

Mr. B. RAMA RAO, M.A., D.I.C., F.G.S.,
Director of Geology.

MYSORE GEOLOGICAL DEPARTMENT,

D. O. No. 18-63.
Cover. 2 copies

Bangalore, 18th March, 1942.

Dear Sir,

In continuation of my D.O. letter No.18-56 dated 26th February 1942, I send you herewith two copies of my report on the progress of investigations conducted so far on the preparation of asbestos-cement sheets.

Yours sincerely,
B Rama Rao

The Secretary,
Board of Industrial Planning &
Co-ordination,
Bangalore.

1) Ack.
2) Refer.
Acknowledged 20/3
S.N. Patel
20/3

PLANNING & COORDINATION
No. 473/M.2
19/3

PLANNING & COORDINATION UNIT
MAR 23 1942
No.....

Progress Report on the Preparation of Asbestos-Cement Sheets.

In the asbestos-cement sheets when first prepared in the Geological Laboratory, the asbestos fibre was obtained by hand pounding the crude, massive asbestos of the Idegondanhalli deposits. In hand pounding it was possible to obtain as fibres more than 80 per cent of this asbestos. The fibre thus obtained was mixed in variable proportions, ranging from 10 to 33 per cent, with cement and water, and the resulting pasty dough was moulded into sheets varying in size from 1 to 3 feet square. The moulded sheets were pressed in a screw press and, after allowing some 6 to 8 hours for their setting, they were transferred to the curing tank and left there for periods extending from 1 to 3 weeks. The sheets so prepared were found to be somewhat inferior in strength to the imported articles.

Subsequently, a few more sheets prepared in the same manner were subjected to higher pressures (in a press of 75 tons pressing capacity which was available at the Government Electric Factory), and those sheets after final curing were found, in their crushing and bending strengths, as good as and even better than the sheets available in the market. (Results of tests, vide Table 1).

2. To ascertain if asbestos-cement sheets of marketable type can be successfully prepared, on productive scales, from the asbestos of local deposits in machinery usually employed in cement-asbestos plants, some large scale experiments were conducted in the card-board plant of the Mysore Paper Mills,

at Bhadravati.

(This plant consists of a beater which pulverises and also mixes the components into a slurry. The slurry is then fed on to a rolling machine through a system of pipes from where it is picked up by the revolving felt as thin films which will be worked up into successive layers forming sheets of the required thickness).

In the first experiment conducted at the Paper Mills, the asbestos fed into the beater was reduced to fine powder and not fiberised. Consequently, due to the lack of suitable interlacing material, the films formed came away, on removal, as broken or torn patches without forming coherent sheets. To remedy this defect a small amount of rag pulp, varying from 2 to 5 per cent, was mixed with asbestos and cement, and this helped the formation of coherent sheets in suitable sizes. These sheets, removed on to steel pellets, were allowed to set for 6 hours. They were then kept under water in a curing tank for periods varying from 2 to 6 weeks. The sheets thus prepared, when tested, were found to be inferior in their crushing and bending strengths to the asbestos sheets available in the markets. (Results of tests, vide Table 2).

From the experiments conducted in the Geological Laboratory, some sheets of the required strength had been obtained; but none of the sheets prepared in the Mill Board plant attained that strength. Probably this may be due to the insufficiency of pressure under which the sheets were compressed or due to

the admixture of the rag pulp; if so, either of these defects can be easily remedied. Usually in preparing asbestos-cement sheets, asbestos of medium elastic fibre (Chrysotile variety) is used and I am not aware of the short, brittle fibre being tried anywhere. Our attempt, in this direction consequently needs some thorough and repeated trials before we can assure ourselves that the locally available type of asbestos can be successfully used for preparing the cement-asbestos products of the required standard. It is desirable to prepare a few more batches of sheets by mixing the Holenarsipur asbestos with a small proportion of the Chrysotile variety and ascertain if the sheets thus prepared would be of the required strength.

From the Director of Industries and Commerce, a couple of cwts. of chrysotile have been purchased recently. Now that we have this material it can be arranged to get a few more batches of sheets prepared at the card-board plant, Bhadravati. The Chairman, Mysore Paper Mills, has been requested to allow us the use of the card-board plant for a few days, if it can be set free, and if he kindly permits us the use of this plant again, for about a week or so, I will ask Mr. T.P. Krishnachar to proceed to Bhadravati and complete the required experiments as early as possible. He is at present engaged in prospecting the kaolin deposits at Bageshpur, and as soon as this work becomes stabilised he will proceed to Bhadravati and take up further investigations on the preparation of the cement-asbestos sheets, at the Card-board plant.

3. Pursuant to the resolution of the Board of Industrial Planning and Co-ordination, as conveyed to me by the Secretary to the Board in his letter No.802/41-2 dated 26th December 1941, I instructed Mr. Krishnachar who has been conducting these experiments to study at the Sandal Oil Factory the methods employed there in preparing the cement-asbestos sheets and tiles, under the direction of Mr. S. G. Sastry. It appears that several batches of asbestos-cement sheets and tiles have been prepared at the Sandal Oil Factory by hand moulding and pressing and it is not known whether the sheets prepared there have been got tested for their crushing and bending strengths.

4. The machinery of the card-board plant at Bhadravati is practically similar to what is generally used elsewhere in preparing the cement-asbestos sheets. However, the type of beater in the Paper Mills card-board plant used in the experiments, seems to be unsuitable for fiberising the asbestos, and consequently, in regular large scale factory productions, a disintegrator may have to be used to produce the fibres and a separate mixer for mixing the ingredients in a dry state. The method which Mr. Krishnachar followed in the Paper Mills for preparing the cement-asbestos sheets is quite similar to the well known process adopted elsewhere; but in the usual practice at factories some 70 to 80 wet sheets are piled one above the other with interposition of steel pellets forming tiers to give the necessary compression and density to the sheets. In the Paper Mills this was not possible as only a few sheets were prepared owing to the experimental nature of the work.

Consequently, the sheets lacked the necessary weight for their compression. As already stated this may perhaps account for the low crushing strength of the sheets prepared. However, before a definite opinion can be expressed in this matter it is necessary to conduct some further experiments at the Paper Mills as I have suggested above.

5. A few samples of cement-asbestos pipes also, had been prepared in the Geological Laboratory, by hand moulding, and the possibility of preparing them on a large scale may be considered later on if the type of asbestos of the Holenarsipur deposits is proved suitable for the preparation of cement-asbestos products in general.

6. From my examination of the Holenarsipur asbestos deposits I am inclined to think that we can get at least some 25 to 30 thousand tons of asbestos of variable grades worked to a depth of 100 to 150 feet. If the deposits are opened out on a large scale there is every probability of the quality of the material improving in depth. This has been the common experience in the asbestos deposits of South Africa and other parts of the world. Moreover, since these deposits occur at the contact of serpentine rocks, during large scale mining we may be able to locate some portions containing chrysotile asbestos in workable veins. Since the asbestos deposits of the Holenarsipur area can yield sufficient material for making some 80 to 100 thousand tons of cement-asbestos products and can feed the raw material for a small factory, of a capacity

of about 4,000 tons of asbestos products per year, for a period of at least 20 to 25 years, I strongly feel that the proposition is worth pursuing. A final note will be sent as soon as the required experiments are conducted and completed and the prepared sheets are got tested in the usual manner.

.....

B Rama Rao 18/1/47

DIRECTOR,
Mysore Geological Department.

Ar.18/3.

TABLE 1.

Results of Tests conducted in the Laboratory of the College of Engineering, Bangalore.

Details of Tests.	Hand moulded and pressed in 75-ton Press.				Foreign. Sheet sold in market.	Selected in Eng. College.	Hand moulded and Hand pressed.	
	1	2	3	4	5	6	7	8
Width of specimen in inches.	2½	2½	2.53	2.53	2.56	2½	2½	2½
Thickness in inches.	.438	.321	0.229	.206	.280	.192	.292	.330
Maximum load taken in lbs.	154	84	51	39	140	52	35	40
Bending stress in lbs. per sq. inch.	2950	3042	3479	3072	6261	390 (Intensity of stress per sq. inch)	153	172
Period of curing in weeks.	3	3	3	2				
Composition.								
Asbestos %	25	20	33	25		-	20	16
Cement %	75	80	67	75		-	80	84

TABLE 2.

Results of Tests conducted in the Laboratory of the College of Engineering, Bangalore.

Details of Tests	Experiment 2.					Experiment 3.					Experiment 4.						Foreign Sample.	
	1	2	3	4	5	1	2	3	4	5	1	2	3	3	4	5	Selected in Eng. College.	Sample sold in market.
Width in inches.	2.54	2.55	2.55	2.5	2.5	2.59	2.53	2.57	2.5	2.5	2.56	2.56	2.54	2.58	2.5	2.5	2.5	2.52
Thickness in inches	.269	.205	.169	.270	.278	.199	.187	.189	.224	.269	.312	.305	.261	.264	.308	.361	.192	.282
Total load taken in lbs.	62	28	24	55	66	33	24	21.3	40	49	41	44	33.6	34	61	39	52	140.3
Bending stress in lbs. per sq. inch.	2871	2356	2966	2689	3085	2832	2432	2087	2825	3064	1474	1666	1584	1686	2331	1065 (Intensity of stress per sq.inch 390)	6261	
Period of curing in weeks.	2	3	4	5	6	2	3	4	5	6	2	3	4	4	5	6	-	-

Duplicate Tests.

Composition.

Expt.2. (Asbestos - 25%, (Cement - 70%, (Rag pulp - 5%

Expt.3. (Asbestos - 20%, (Cement - 76%, (Rag pulp - 3%, (Sod. Silicate: 1%

Expt.4. (Asbestos - 15%, (Cement - 83%, (Rag pulp - 2%

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

1269/41.2

20th March

M.S. Swaminathan, Esq., M.A.,B.Sc.,
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

The Director of Geology in Mysore,
Bangalore.

Sub: Investigations on the manufacture of cement asbestos sheets and pipes.

I have the honor to acknowledge the receipt of your progress report on the above subject sent with your letter No.18-63 dated 18th March 1942.

The report will be placed before the Board at the next meeting. The date of the meeting will be intimated to you.

I have the honor to be,
Sir,
Your most obedient servant,

Secretary.

248 d - 2

One. 24th March 2

Mr.M.S. Swaminathan,M.A.,B.Sc.,
xxxxxxxxxxxxxxx

Urgent.

Dear Sir,

Subject: Manufacture of Cement-asbestos sheets & Pipes.

I am desired to send herein enclosed a typed copy of the progress report on the investigations on the manufacture of Cement-asbestos sheets and Pipes received from the Director of Geology for favour of perusal and early return, with your remarks.

This subject is on the agenda for the next meeting.

Yours sincerely,

24/3

1)The Chairman, M.I.S.W.
2)The Director of I & C.

No 1315/41.2 xxxxxxxxxxxxxxxxxxxxxxxx

31st March 2

Mr M. S. Swaminathan, M.A., B.Sc.,
xxxxxxxxxxxxxxxx

Dear Sir,

Sub: Manufacture of cement-asbestos sheets and pipes - Investigations.
Refce: This office D.C.letter No.1280-2 dated 24th March 1942.

I request you to be so good as to arrange to return the note of the Director of Geology sent with the above letter, with your remarks for being placed before the Board at the meeting on the 6th April.

Yours sincerely,

S.G. Sastry, Esq., B.A., B.Sc., (Lond),
Director of Industries and Commerce in Mysore, Bangalore.

Subject no 2

Tele {Phone No.2004
Grams—INDUSCOM.

In reply please quote number, date & short title.

GOVERNMENT OF MYSORE

DEPARTMENT OF INDUSTRIES AND COMMERCE

SECRETARY
BOARD OF INDUSTRIAL PLANNING & COORDINATION.
APR 7 1942
No. 4 p.m.

FROM

S. G. Sastry, Esq.,B.A.,M.Sc.(Lond),
Director of Industries and Commerce in Mysore,
Bangalore.

Placed before
To Board on 8/4.

T. Shamanna, Esq.,M.A.,
Secretary, Board of Industrial Planning
and Co-ordination, Old Public Offices,
Bangalore.

No. 13/Genl

Dated , Bangalore, 7th April 1942.

Enclosures 1

SIR,

Reference:- Your letter No. 1715/41-42 dated 31st March 1942.

Subject:- Manufacture of cement asbestos sheets - Investigations.

I have the honour to return herewith the progress report submitted to the Board by the Director of Geology. The experiments are worth conducting with other varieties of asbestos than those obtained in Mysore.

In my experiments conducted at the Sandalwood Oil Factory (about 40 experiments) I discovered that the Mysore variety of asbestos was not much good for this purpose. When I visited the Cement Asbestos Company at Mulund (28 miles from Bombay), the Technical Expert informed me that his Company had experimented with every type of asbestos that can be found in India, including samples from Hole-Narsipur. His Company was not satisfied with the quality of the product obtained in India. Occasionally however his company used small amounts of asbestos from the Cuddapah District. They use mainly imported asbestos both at Mulund and Kevmore.

The Director of Geology wanted samples of Cuddapah asbestos and I have supplied him with two Cwts. from my stocks. Further experiments are in progress as per the report of the Director of Geology.

When I got interested in this problem about six or seven years ago, I was informed that the dependable deposits of asbestos in Mysore could not be estimated to come to more than 8,000 tons. It had then been suggested that going further down, instead of collecting samples practically at the surface, may improve the quality as well as the quantity of asbestos in that area. I see from the report of the Director of Geology that he is working on these lines.

I think that the strength of local asbestos fibre is strong enough for the manufacture of a simple type of cement asbestos tile. If the sheet is to be cast or moulded in big sizes, the mechanical strength required will be higher than ~~that~~ if the sheets are of smaller dimensions. I have actually prepared these tiles which seem good and satisfactory and probably the Director of Geology may continue these experiments further at Bhadravati. These will be superior to the Mangalore tiles now used in the ~~bazaar~~ trade in the Mysore State.

I also tried experiments to manufacture cement asbes

Asbestos tiles of the Mangalore tile pattern and in fact have a watchman's cabin roofed with these tiles. They have stood all the weather and weathering conditions for over two years and seem to be quite satisfactory but the cost will be a lot more than the cost of ordinary Mangalore tiles. It is for this reason that I devised a standard and simple type of tile to which I have referred to in the previous paragraph.

I also conducted some correspondence with the manufacturers of the asbestos board making equipment that was with us in Mysore and which is now in Bhadravati. The manufacturers have informed me that it is quite possible adapt the equipment to serve the needs of the cement asbestos sheet industry also. The matter can be taken up when further progress justifies the consideration of starting a new factory for this purpose.

I am in favour of these experiments being continued at Bhadravati.

I have the honour to be,
Sir,
Your most obedient servant,

Director.

Copy of letter No.13/40-41 dated 7th April 1942 from the Director of Industries and Commerce in Mysore, Bangalore to the Secretary, Board of Industrial Planning and Co-ordination, Bangalore.

=====

Refce: Your letter No.1315/41-2 dated 31st March 42.

Subject: Manufacture of cement asbestos sheets - Investigations.

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I think that the strength of local asbestos fibre is strong enough for the manufacture of a simple type of cement asbestos tile. If the sheet is to be cast or moulded in big sizes, the mechanical stength required will be higher than if the sheets are of smaller dimensions. I have actually prepared these tiles which seem good and satisfactory and probably the Director of Geology may continue these experiments further at Bhadravati. These tiles will be superior to the Mangalore tiles now used in the building trade in Mysore State.

I also tried experiments to manufacture cement asbestos tiles of the Mangalore tile pattern and in fact have a watchman's cabin roofed with these tiles. They have stood all the weather and weathering conditions for over two years and seem to be quite satisfactory but the cost will be a lot more than the cost of ordinary Mangalore tiles. It is for this reason that I devised a standard and simple type of tile to which I have referred to in the previous paragraph.

I also conducted some correspondence with the manufacturers of the asbestos board making equipment that was with us in Mysore and which is now in Bhadravati. The manufacturers have informed me that it is quite possible adapt the equipment to serve the needs of the cement asbestos sheet industry also. The matter can be taken up when further progress justifies the consideration of starting a new factory for this purpose.

I am in favour of these experiments being continued at Bhadravati.

sd. S.G. Sastry.
Director of
I & C.

Copy of letter No.13/40-41 dated 7th April 1942 from the Director of Industries and Commerce in Mysore, Bangalore to the Secretary, Board of Industrial Planning and Co-ordination, Bangalore.

=====

Refce: Your letter No.1315/41-2 dated 31st March 42.

Subject: Manufacture of cement asbestos sheets - Investigations.

====

I have the ho or to return herewith the progress report submitted to the Board by the Director of Geology. The experiments are worth conducting with other varieties of asbestos than those obtained in Mysore.

In my experiments conducted at the Sandalwood Oil Factory (about 40 experiments) I discovered that the Mysore variety of asbestos was not much good for this purpose. When I visited the Cement Asbestos Company at Mulund (28 miles from Bombay), the Technical Expert informed me that his Company had experimented with every type of asbestos that can be found in India, including samples from Hole-Narasipur. His Company was not satisfied with the quality of the product obtainable in India. Occasionally however his Company used small amounts of asbestos from the Cuddappah District. They use mainly imported asbestos both at Mulund and Keymore.

The Director of Geology wanted samples of Cuddappah asbestos and I have supplied him with two Cwts. from my stocks. Further experiments are in progress as per the report of the Director of Geology.

When I got interested in this problem about six or seven years ago, I was informed that the dependable deposits of asbestos in Mysore, could not be estimated to come to more than 8,000 tons. It had then been suggested that going further down, instead of collecting samples practically at the surface, may improve the quality as well as the quantity of asbestos in that area. I see from the report of the Director of Geology that he is working on these lines.

I think that the strength of local asbestos fibre is strong enough for the manufacture of a simple type of cement asbestos tile. If the sheet is to be cast or moulded in big sizes, the mechanical stength required will be higher than if the sheets are of smaller dimensions. I have actually prepared these tiles which seem good and satisfactory and probably the Director of Geology may continue these experiments further at Bhadravati. These tiles will be superior to the Mangalore tiles now used in the building trade in Mysore State.

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I also conducted some correspondence with the manufacturers of the asbestos board making equipment that was with us in Mysore and which is now in Bhadravati. The manufacturers have informed me that it is quite possible adapt the equipment to serve the needs of the cement asbestos sheet industry also. The matter can be taken up when further progress justifies the consideration of starting a new factory for this purpose.

I am in favour of these experiments being continued at Bhadravati.

sd. S.G. Sastry.
Director of
I & C.

1364/41-2

17th April

The Director of Geology in Mysore, Bangalore.

Manufacture of cement - asbestos sheets & pipes.

8th April 1942

The note of the Director of Industries and Commerce was perused. On a question by the Chairman, the Director of Geology stated that he would arrange to conduct the experiments immediately and the Government was pleased for the loan of machinery. The Chairman, Mysore Iron and Steel Works was requested to arrange for this at an early date. A note to the effect of the Director of Geology was then recorded."

No.1365-1/41-2 dated 17th April 1942.

Copy with compliments to

1) The Chairman, Mysore Iron and Steel Works, Bangalore for favour of information and necessary further action.

2) The Development Secretary for favour of information.

Sd. T. Shamanna.

Secretary.

RAMA RAO, M.A., D.I.C., F.G.S.
Director of Geology.

SECRETARY.
BOARD OF INDUSTRIAL
PLANNING & CO-ORDINATION
MAY 20 1942

MYSORE GEOLOGICAL DEPARTMENT,

D. O. No. 18-7 S- Nb/No.558/46-2 Bangalore, 19th May 1942.

Dear Sir,

With reference to your letter No.1571/41-2 dated 18th May 1942 enclosing the Agenda for the next meeting of the Board of Industrial Planning and Co-Ordination, and asking me to furnish a Progress Report on item No.1 in that Agenda, viz., Investigations on the Manufacture of Cement-Asbestos Sheets and Pipes, I desire to say that since submitting my detailed note on this subject, vide my letter No.18-63 dated 18th March 1942, which was already reviewed in one of the previous meetings of the Board (held on 2nd April 1942), no further progress has been made as the card-Board Plant in the Mysore Paper Mills has not been free to continue the experiments. As soon as this can be set free for the purpose of our experiments, continuously for about a week, further experiments will be arranged to be carried out. In these circumstances, I think this subject may be deleted from the Agenda of the next meeting of the Board, proposed to be held on the 29th instant. I will send a note as soon as any further progress is made.

A

Yours sincerely,

B Ramarao

Submitted
For instructions re 'A'.

Nb 20.5.42

This letter will be read in the meeting. There not appear to be any need to delete the subject

Fo 20/5

The Secretary,
Board of Industrial Planning & Co-Ordination,
Public Offices, Bangalore.

BOARD OF INDUSTRIAL PLANNING AND COORDINATION.

Board meeting on 29.5.42

General and Revenue Secretariat | File No. | of 194 . | [App. F. III-2

Serial No.

OFFICE OF THE MINISTER

2 MAY 1942

7589

Seen by the chairman

NOTE—Cont. Sheet.

WD 24155—GPB—55,000—23-10-41

1648/41-2

18th June

The Director of Geology in Mysore, Bangalore.

Manufacture of cement asbestos sheets and pipes.

29th May 1942

"The interim report of the Director of Geology was read and recorded. The Chairman observed that work might be expedited."

CONFIDENTIAL.

BOARD OF INDUSTRIAL PLANNING AND CO-ORDINATION.

PROCEEDINGS OF THE FIFTEENTH MEETING HELD ON FRIDAY THE 29TH MAY 1942, AT 8-30 A.M. IN THE CHAMBERS OF THE MINISTER FOR FINANCE AND REVENUE.

PRESENT.

Rajamantrapravina K. V. Anantaraman, Esq., B.A., Minister for Finance and Revenue. (*Chairman.*)

MEMBERS.

1. V. Vedavyasacharya, Esq., B.A., Secretary to Government, Development Department.
2. E. V. Ganapati Iyer, Esq., B.Sc., Government Director, Industrial Concerns.
3. B. G. Appadurai Mudaliar, Esq., B.A., B.Sc., A.M.I.M.E., Director, Industrial Planning.
4. C. Abdul Jabbar, Esq., B.A., Chief Conservator of Forests in Mysore.

T. Shamanna, Esq., M.A., Assistant Secretary to Government, Development Department. (*Secretary.*)

ABSENT.

1. *Rajasevaprasakta* T. G. Rama Iyer, Esq., B.A., Director of Agriculture in Mysore.
2. S. G. Sastry, Esq., B.A., M.Sc. (Lond.), Director of Industries and Commerce in Mysore.
3. M. Venkatanaranappa, Esq., B.A., Chairman, Mysore Iron and Steel Works, Bhadravati.

(Letters expressing their inability to attend the meeting were received.)

Agenda.

1. Investigations on the manufacture of cement asbestos sheets and pipes—Review of progress.
2. To review the progress reports *re* War Efforts received from the departments—Secretariat file.
3. Manufacture of Silkworm Guts—Review of progress.
4. Encouragement to Chemical Glassware Syndicate—Review of progress.
5. Manufacture of clove oil at the Government Soap Factory—Review of progress.
6. Manufacture of Furfural at the Iron and Steel Works—Review of progress.

7. Cultivation of Geranium—Agricultural Department.
8. Cultivation of Vetivert—Forest Department.
9. Cultivation of Pyrethrum—Forest Department—Review of progress.
10. To consider the request of Dr. Joshi, Benares Hindu University, *re* the exploitation of the results of his investigations *re* substitutes for acetic anhydride and acetyl chloride required in cotton and silk industry—Letter of the Government Director, Industrial Concerns.
11. Investigations on the testing of red oxide of iron of the Sandur State and the manufacture of paints from the pigments prepared from these ores —Report of the Director, Sandalwood Oil Factory—Secretariat file.
12. Civil production work in the State for April and May—Report of the Director, Industrial Planning.

1. Investigations on the manufacture of cement asbestos sheets and pipes.

The interim report of the Director of Geology was read and recorded. The Chairman observed that work might be expedited.

2. War Efforts and Civil Production Work—Review of progress.

A consolidated statement for the months from February to May 1942 had been prepared by the Development Secretary and had been placed before the Board. The statement was read and recorded.

The report of the Director, Industrial Planning, for April and May *re* civil production work, copies of which had been sent to the members was then taken up for consideration.

The Government Director brought to the notice of the Board the difficulties experienced in obtaining sufficient number of waggons for transporting goods manufactured and urged for better facilities. The Chief Conservator of Forests while agreeing with the remarks of the Government Director stated that he was able to secure some relief by corresponding with the authorities of the G. I. P. Railway and Supply Department. The Chairman remarked that the Government Director might also take necessary action.

While reviewing the action taken by the Director, Industrial Planning, *re* supply of army requirements through Small Scale Industries, the Chairman observed that while accepting the allotments, care should be taken to so fix the prices as to see that there may not be any loss to Government, though it is not their desire to derive any profit out of this. The Director, Industrial Planning, stated that he had made this point clear to the Government of India in his letter addressed to the Controller of Supplies, Southern Division, and that he would take necessary action in the matter.

The Government Director and the Director, Industrial Planning, explained the work done in the concerns under their control.

Referring to the enquiries received from the Supply Department, the Chairman observed that as Mysore imports fairly large quantities of refined salt and as there was very little chance of supplying it from here, the item might be omitted from the list.

It was pointed out that no information had been furnished in the report of the Director, Industrial Planning, about the Forest Department.

The Chairman remarked that the report should be full and up-to-date and that information from the Forest Department and also about war technicians might be obtained and included in the report.

3. Manufacture of Silkworm Guts.

The report of the Director of Industries and Commerce was read and recorded. It was decided that work should be continued immediately after seasonal conditions grew favourable.

4. Encouragement to Chemical Glassware Syndicate.

The Government Director explained the work done so far. It was reported that over Rs. 1,500 worth of glass materials had been supplied to the various concerns. It was also noted that some business had been secured from the Supply Department. The action taken by the Government Director to provide additional accommodation for this section at the Government Soap Factory was also approved.

The report was then recorded with the observation that further progress might be awaited.

5. Manufacture of Clove Oil.

The Government Director explained the work done so far and said that further work was in progress. He also said that about 73 lbs. of the oil was in stock. Further progress was awaited.

6. Manufacture of Furfural.

The report of the General Manager, Mysore Iron and Steel Works, was read and recorded. It was decided that work might be expedited.

7. Cultivation of Geranium.

It was noted that the Geranium cuttings were being multiplied and that further work would be taken up during the next rainy season and that during the coming winter the Department would be in a position to have sufficient material ready for preliminary analysis. The report of the Director of Agriculture was then recorded.

8. Cultivation of Vetivert.

The Chief Conservator of Forests reported that the cultivation of Vetivert was in progress in Talkad. He said that though the yield was not satisfactory the aroma was quite good and that further experiments were in progress to determine which of the monthly collections yielded the best results. He promised to send a report.

9. Cultivation of Pyrethrum.

The Chief Conservator of Forests explained the work done so far and said that he had now sufficient stock of seedlings, that two more acres near Kemmannagundi had now been cultivated and that by June next he would be able to extend the cultivation to 500 acres and in three years to about 1,500 acres aiming at a production of seven tons which is the requirement of the Health Department.

The report was then recorded.

10. Exploitation of the research of Dr. Joshi, Benares Hindu University, *re* substitutes for acetic anhydride and acetyl chloride.

A copy of the enquiry received from the Government Director, Industrial Concerns, had been circulated to all the members.

It was agreed that the subject was not of interest to any of the departments here.

11. Investigations on the testing of red oxide of iron of Sandur State.

The Secretariat file was placed before the Board. The report of the Director, Sandalwood Oil Factory, on the investigations conducted at the Mysore Government Lac and Paint Works was recorded.

The meeting then terminated.

T. SHAMANNA,
Secretary.

K. V. ANANTARAMAN,
Chairman.

WD 4407—GPB—75—30-6-42.

Subject AP 5

WD 07011—G PB—75,000—26-5-42

C. F. No. 40]

BOARD OF INDUSTRIAL PLANNING AND CO-ORDINATION
JUL 15 1942
No. 38/42-2

194 .

From

The Director of Geology
in Mysore,
Bangalore.

To

The Secretary,
Board of Industrial Planning
and Co-ordination,
Public Offices,
Bangalore.

Report perused by Hon. Min. I&R. on 17.7.42

Dated

Despatched 14th July 1942.

Received

~~General~~ No. ~~8 41~~ 18-90.
No.

Enclosure No. one.

Dear Sir,

Subject: Preparation of Asbestos Cement Sheets.

In enclosing herein a copy of letter No.G.515 dated 10th July 1942 from the General Manager, the Mysore Paper Mills, Ltd., Bhadravati, explaining the difficulties found, at present, in placing the cardboard plant at our disposal for the above work and suggesting to keep the matter in abeyance until he advises to resume the trials, I desire to say that we are obliged to postpone the above investigations for some time to come.

Yours faithfully,

B Ramarao

DIRECTOR,
Mysore Geological Department.

Ar.14/7.

Copy of letter No.G.515 dated 10th July 1942 from the General Manager, The Mysore Paper Mills Limited, Bhadravati, to the Director of Geology in Mysore, Bangalore.

Sub: Preparation of Asbestos-Cement Sheets.

We acknowledge receipt of your letter No.G/14 dated 2nd instant, enclosing copy of letter dated 18th June 1942 that the Secretary of the Board of Industrial Planning and Co-ordination, Bangalore, has addressed to the Director of Geology in the above connection.

We wish to bring to your notice the following difficulties we find in placing our cardboard plant at your disposal for the above work immediately:-

1) We are committed to supply chemically neutral mill boards to the Department of Supply, Government of India, for use in the Ammunition Factory, Kirkee, and these supplies are far behind schedule on account of stoppage of the plant for lack of coal and subsequently due to the strike. We have to run the plant continuously to complete this urgent order.

2) The only cardboard felt we have is running on the machine, and there is no spare felt. As you are aware, the felt becomes completely useless for cardboard manufacture after it is used for asbestos-cement sheet making. We do not know when the felts on order will be available here.

We therefore request you to agree to keep the matter in abeyance until the position with respect both to the Government of India order, and spare felts, has become easier, when we will ourselves advise you to resume the trials. Please confirm that you are agreeable to our suggestion.

B Ramdas

DIRECTOR,
Mysore Geological Department.

Ar.14/7.

I.P.191/42-3

8th October 2

The Director of Geology in Mysore, Bangalore.

Manufacture of cement asbestos sheets.

15th Septr.1942.

"The report of the Director of Geology was read and recorded. The Director of Geology stated that the experimental investigations had been practically completed and that if any private persons could take this up, it would be desirable to encourage them to do so. The Chairman observed that it was always the declared policy of Government to encourage private individuals or enterprises to take up such schemes if they were interested in them. He further stated that in all such cases where investigations were conducted by Government Departments, it was desirable to publish the results of such investigation in the form of a bulletin for the information of the interested public. The Director of Geology promised to take necessary action."

No.I.P.192/42-3.

Copy to Development Secretary
for favour of information.

Secretary.

Sd. T. Shamanna.

I.P.4/3/42-3

5th January 1943.

The Director of Geology in Mysore,
Bangalore.

Subject: Manufacture of cement asbestos sheets and pipes.

+++

In inviting kind reference to letter No.I.P.191/42-3 dated the 8th October 1942 communicating the decision of the Board, on the subject, I am directed to enquire the action taken in the matter.

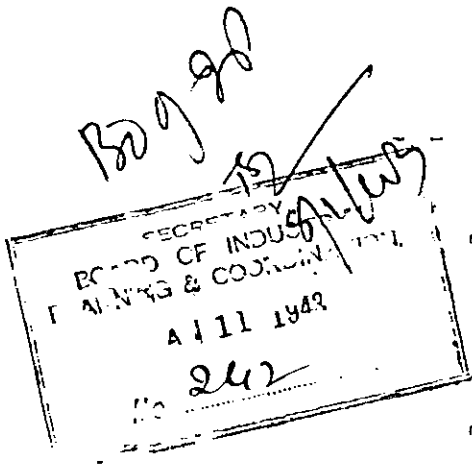
I have etc.,

for 4/1/43

Secretary.

9/1 2/3

WD 07011-GPB—75,000—26 5 42



C. F. No. 40]

194 .

From

The Director of Geology
in Mysore,
Bangalore.

To

The Secretary,
Board of Industrial Planning
and Co-ordination,
Bangalore.

Dated

Despatched 7th January 1943.

Received

General No. G. 1638
No.

Enclosure No.

Sir,

Subject: Manufacture of Cement Asbestos Sheets and Pipes.

With reference to your letter No.I.P.413/42-3 dated 5th January 1943, on the above subject, I have the honour to state that a bulletin on the manufacture of Cement Asbestos Sheets in Mysore is being compiled and that as soon as it is ready it will be sent to the Press. In the meanwhile the relevant information has been furnished

(p.t.o)

to 2 or 3 people who seemed to be interested in developing this industry.

I have the honour to be,
Sir,
Your most obedient servant,

J Ramachar
For Director,
Mysore Geological Department

Ar.7/1.

GOVERNMENT OF HIS HIGHNESS THE MAHARAJA OF MYSORE

General and Revenue Secretariat

No. W 8118/D+6.467-42 *Dated, Bangalore* 8th June 1943.

FROM

The Secretary to the Government of His Highness the Maharaja of Mysore.
Development Department.

To 7396

The Director of Geology in Mysore.
BANGALORE

Sir,

SUBJECT:- Investigations on Cement-Asbestos Products - Publication of a Bulletin.

With reference to your letter No.G.2625, dated the 24th March 1943, enclosing a note on the above subject. and soliciting approval for publishing the paper in the Popular Studies Series of the Department, as recommended by the Board of Industrial Planning and Co-ordination, I am directed to convey the approval of Government to the proposal and to request that 25 printed copies of the note may be sent to the office of the Board of Industrial Planning and Co-ordination, for reference.

I have the honour to be,
Sir,
Your most obedient servant.

Secretary to Government.
Development Department.

KRS/2. Copy to Board 9/7